

THE REPORT
OF THE
PRESIDENT
OF
QUEEN'S COLLEGE, BELFAST,
FOR
THE YEAR ENDING 31ST JULY, 1872.

Presented to both Houses of Parliament by Command of Her Majesty



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OF THE

PRESIDENT OF QUEEN'S COLLEGE, BELFAST,

FOR

THE SESSION ENDING 31st JULY, 1872.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,—

I have the honour to submit to your Majesty my annual Report regarding the progress and condition of this College, for the year 1872, embracing the three terms which constitute the Session. During that year 358 Students were in attendance in the different departments of Arts, Medicine, Law and Engineering. Of these it will be seen by the tables embodied in the Report that 326 were matriculated and 33 non-matriculated. Referring to the various returns I have had the honour of presenting to Parliament, a progressive and marked increase in the number of matriculated students in yearly attendance, as compared with the non-matriculated, will at once be apparent—a fact mainly ascribable to the influence which the Queen's University has exercised over the students in preparing them for their selected professions and avocations in life.

In furnishing this Report I feel it my duty to keep steadily in view, as I have ever endeavoured to do, the important objects contemplated by the founders of the Queen's Colleges in Ireland. I may be permitted at present, when university education is attracting special attention, to reiterate a former expression of opinion that their object was to retain in the curricula what experience had proved to be solid and necessary, as foundations of mental culture and of knowledge, and to superadd the requirement of those really practical branches, adapted to the entirely altered condition of the age, and of the world. It appeared essential to lay down a defined matriculation course, requiring not only a basis of classical and mathematical knowledge in the intransigent, but an acquaintance with those branches which qualify any young man for public life, namely, history, composition, geography, and arithmetic, which are often sacrificed in classical schools, because they are not imperative in colleges. The same principle made it indispensable to introduce into the courses for graduation, in addition to the branches usually followed in other colleges, one modern language at least, with chemistry and natural history.

It has been required that in the classes of logic and metaphysics, the student should investigate those powers of thought and action which lie within himself, and which equally, with the phenomena of the external world are indicative of the Infinite Wisdom that communicated judgment and intelligence to man. Thus courses were adopted, and have been steadily and laboriously pursued, founded on the true idea of collegiate education, as combining the development of mental power with the acquisition of sound knowledge—courses embracing what is valuable in ancient literature, and practical in modern philosophy and science. Throughout the collegiate session, steady and daily attendance on the lectures of the professors is a fixed condition for obtaining certificates, and to this professorial system is added the necessary observance of private study and investigation by which the young man is taught the independent use of his own powers and faculties. This combination of the professorial and tutorial system has produced results in the successes of its students, of which this or any other College might well feel proud.

In making the Denominational Returns I have thought it right to classify the students of the various Churches as they have designated themselves in the forms filled up by them at entrance.

The four following tables will be found both satisfactory and comprehensive.

I.—NUMBERS AND RELIGIOUS PERSUASIONS of STUDENTS attending Lectures in QUEEN'S COLLEGE, BELFAST, in each Session from its opening.

SESSIONS.	Matriculated.	Non-Matriculated.	Total.	Church of Ireland.	Roman Catholic.	Presbyterian.	Methodist.	Independent.	Various.	Total.
1849-50, . . .	90	105	195	33	5	145	4	1	7	196
1850-51, . . .	110	75	185	33	10	136	4	1	1	185
1851-52, . . .	120	69	189	40	14	129	5	-	1	189
1852-53, . . .	101	53	154	33	15	100	4	-	2	154
1853-54, . . .	114	54	168	36	14	107	6	-	5	168
1854-55, . . .	118	63	183	34	14	131	3	-	1	183
1855-56, . . .	119	74	193	33	19	131	5	2	3	193
1856-57, . . .	136	58	194	35	14	131	3	2	9	194
1857-58, . . .	153	54	207	31	14	154	4	1	3	207
1858-59, . . .	160	63	223	45	14	153	8	2	1	223
Average of first 10 years, }	122.1	67	189.1	35.3	13.5	151.7	4.6	.9	3.8	189.1
1859-60, . . .	190	58	247	43	16	184	8	2	4	257
1860-61, . . .	239	73	312	57	22	216	7	-	10	312
1861-62, . . .	289	76	365	59	17	288	13	4	16	375
1862-63, . . .	335	53	388	61	24	275	11	8	14	388
1863-64, . . .	340	47	387	63	26	281	10	8	24	387
1864-65, . . .	356	49	405	58	23	285	9	1	39	405
1865-66, . . .	360	53	413	60	19	281	18	2	38	413
1866-67, . . .	357	39	397	57	19	225	12	1	67	397
1867-68, . . .	357	33	390	59	16	233	25	2	55	390
1868-69, . . .	330	38	368	51	15	230	26	2	54	368
Average of second 10 years, }	317.2	51	368.2	56.8	19.6	244.5	14.0	2.0	31.2	368.2
1869-70, . . .	308	25	333	57	18	214	19	3	42	333
1870-71, . . .	337	43	380	76	14	225	28	4	88	380
1871-72, . . .	325	33	358	80	17	203	12	1	45	358

II.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS who have entered QUEEN'S COLLEGE, BELFAST, in each year since its opening.

SESSIONS.	Matri- culated.	Non- Matri- culated.	Total.	Church of Ireland.	Roman Catho- lics.	Presby- terian.	Metho- dist.	Inde- pend- ent.	Va- rious.	Total.
1849-50, . . .	90	105	195	33	5	145	4	1	7	195
1850-51, . . .	51	42	93	15	7	68	1	—	2	93
1851-52, . . .	42	40	82	25	7	47	2	—	1	82
1852-53, . . .	31	23	54	16	7	28	2	—	1	54
1853-54, . . .	39	23	62	14	5	36	3	—	4	62
1854-55, . . .	41	38	79	13	6	56	2	—	2	79
1855-56, . . .	38	29	67	17	5	36	2	2	—	62
1856-57, . . .	40	28	68	18	4	40	1	—	5	68
1857-58, . . .	43	28	71	8	8	55	2	—	—	71
1858-59, . . .	51	37	88	24	8	51	4	1	—	88
Entered first 10 years,	471	393	864	183	60	562	23	4	22	854
1859-60, . . .	66	24	90	14	6	64	4	—	2	90
1860-61, . . .	56	41	97	29	13	85	5	—	7	107
1861-62, . . .	114	38	152	27	5	101	6	3	10	152
1862-63, . . .	115	22	137	23	12	92	5	—	5	137
1863-64, . . .	109	10	119	25	5	88	3	—	7	127
1864-65, . . .	109	27	136	22	6	97	3	—	7	135
1865-66, . . .	68	30	98	17	7	83	5	—	8	118
1866-67, . . .	95	12	107	16	8	61	10	—	14	107
1867-68, . . .	90	22	112	20	5	63	1	1	22	112
1868-69, . . .	79	24	103	16	7	60	6	2	12	103
Entered in second } 10 years,	900	350	1,250	269	72	793	46	7	32	1,218
Total in 20 years,	1,421	651	2,072	392	132	1,354	69	11	114	2,072
1869-70, . . .	93	15	108	23	8	54	4	1	8	98
1870-71, . . .	84	30	114	36	2	57	0	1	10	114
1871-72, . . .	78	25	103	28	6	50	5	1	13	103
	1,086	*721	2,387	479	148	1,515	86	14	145	2,387

III.—REVENUE of the Number of Medical Students in attendance in each Session.

Session.	Matri- culated.	Non-Ma- tricolated.	Total.	Session.	Matri- culated.	Non-Ma- tricolated.	Total.
1849-50,	28	27	55	1861-62,	81	48	129
1850-51,	20	35	55	1862-63,	89	33	122
1851-52,	25	39	64	1863-64,	110	33	143
1852-53,	29	33	62	1864-65,	126	25	151
1853-54,	29	37	66	1865-66,	130	29	159
1854-55,	39	36	75	1866-67,	157	17	174
1855-56,	33	48	81	1867-68,	163	18	181
1856-57,	36	25	61	1868-69,	150	24	174
1857-58,	35	32	67	1869-70,	145	22	167
1858-59,	45	34	79	1870-71,	162	26	184
1859-60,	56	39	95	1871-72,	162	25	187
1860-61,	70	46	116				

* Of the 721 who entered as non-matriculated Students, 147 afterwards passed a matriculation examination. The College Register contains 1,818 matriculated and 574 non-matriculated, in all 2,387 students.

IV.—Tables showing the Numbers of Students attending the Lectures of each Professor in each year since the opening of the College.

Professor, or	1828-29	1829-30	1830-31	1831-32	1832-33	1833-34	1834-35	1835-36	1836-37	1837-38	1838-39	1839-40	1840-41	1841-42	1842-43	1843-44	1844-45	1845-46	1846-47	1847-48	1848-49	1849-50	1850-51	1851-52	1852-53	1853-54	1854-55	1855-56	1856-57	1857-58	1858-59	1859-60	1860-61	1861-62	1862-63	1863-64	1864-65	1865-66	1866-67	1867-68	1868-69	1869-70	1870-71	1871-72	1872-73	1873-74	1874-75	1875-76	1876-77	1877-78	1878-79	1879-80	1880-81	1881-82	1882-83	1883-84	1884-85	1885-86	1886-87	1887-88	1888-89	1889-90	1890-91	1891-92	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1898-99	1899-00	1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09	2109-10	2110-11	2111-12	2112-13	2113-14	2114-15	2115-16	2116-17	2117-18	2118-19	2119-20	2120-21	2121-22	2122-23	2123-24	2124-25	2125-26	2126-27	2127-28	2128-29	2129-30	2130-31	2131-32	2132-33	2133-34	2134-35	2135-36	2136-37	2137-38	2138-39	2139-40	2140-41	2141-42	2142-43	2143-44	2144-45	2145-46	2146-47	2147-48	2148-49	2149-50	2150-51	2151-52	2152-53	2153-54	2154-55	2155-56	2156-57	2157-58	2158-59	2159-60	2160-61	2161-62	2162-63	2163-64	2164-65	2165-66	2166-67	2167-68	2168-69	2169-70	2170-71	2171-72	2172-73	2173-74	2174-75	2175-76	2176-77	2177-78	2178-79	2179-80	2180-81	2181-82	2182-83	2183-84	2184-85	2185-86	2186-87	2187-88	2188-89	2189-90	2190-91	2191-92	2192-93	2193-94	2194-95	2195-96	2196-97	2197-98	2198-99	2199-00	2200-01	2201-02	2202-03	2203-04	2204-05	2205-06	2206-07	2207-08	2208-09	2209-10	2210-11	2211-12	2212-13	2213-14	2214-15	2215-16	2216-17	2217-18	2218-19	2219-20	2220-21	2221-22	2222-23	2223-24	2224-25	2225-26	2226-27	2227-28	2228-29	2229-30	2230-31	2231-32	2232-33	2233-34	2234-35	2235-36	2236-37	2237-38	2238-39	2239-40	2240-41	2241-42	2242-43	2243-44	2244-45	2245-46	2246-47	2247-48	2248-49	2249-50	2250-51	2251-52	2252-53	2253-54	2254-55	2255-56	2256-57	2257-58	2258-59	2259-60	2260-61	2261-62	2262-63	2263-64	2264-65	2265-66	2266-67	2267-68	2268-69	2269-70	2270-71	2271-72	2272-73	2273-74	2274-75	2275-76	2276-77	2277-78	2278-79	2279-80	2280-81	2281-82	2282-83	2283-84	2284-85	2285-86	2286-87	2287-88	2288-89	2289-90	2290-91	2291-92	2292-93	2293-94	2294-95	2295-96	2296-97	2297-98	2298-99	2299-00	2300-01	2301-02	2302-03	2303-04	2304-05	2305-06	2306-07	2307-08	2308-09	2309-10	2310-11	2311-12	2312-13	2313-14	2314-15	2315-16	2316-17	2317-18	2318-19	2319-20	2320-21	2321-22	2322-23	2323-24	2324-25	2325-26	2326-27	2327-28	2328-29	2329-30	2330-31	2331-32	2332-33	2333-34	2334-35	2335-36	2336-37	2337-38	2338-39	2339-40	2340-41	2341-42	2342-43	2343-44	2344-45	2345-46	2346-47	2347-48	2348-49	2349-50	2350-51	2351-52	2352-53	2353-54	2354-55	2355-56	2356-57	2357-58	2358-59	2359-60	2360-61	2361-62	2362-63	2363-64	2364-65	2365-66	2366-67	2367-68	2368-69	2369-70	2370-71	2371-72	2372-73	2373-74	2374-75	2375-76	2376-77	2377-78	2378-79	2379-80	2380-81	2381-82	2382-83	2383-84	2384-85	2385-86	2386-87	2387-88	2388-89	2389-90	2390-91	2391-92	2392-93	2393-94	2394-95	2395-96	2396-97	2397-98	2398-99	2399-00	2400-01	2401-02	2402-03	2403-04	2404-05	2405-06	2406-07	2407-08	2408-09	2409-10	2410-11	2411-12	2412-13	2413-14	2414-15	2415-16	2416-17	2417-18	2418-19	2419-20	2420-21	2421-22	2422-23	2423-24	2424-25	2425-26	2426-27	2427-28	2428-29	2429-30	2430-31	2431-32	2432-33	2433-34	2434-35	2435-36	2436-37	2437-38	2438-39	2439-40	2440-41	2441-42	2442-43	2443-44	2444-45	2445-46	2446-47	2447-48	2448-49	2449-50	2450-51	2451-52	2452-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I think it right to refer particularly to the organization that exists in the Queen's Colleges regarding the annual examinations for scholarships in these institutions. These honours are annually competed for, with the exception of the second year, by those students qualified to become candidates, and are held only for one year. This practice is different in the greater number of other universities where the scholarships are held for three, four, and in some of them for five years. The misapprehension which has existed respecting the number of scholarships attached to the Queen's Colleges, ought at once to be removed by a candid consideration of this fact. Forgetfulness of this arrangement has led many to regard the scholarships as fully double what they really are, and thus by so much to exaggerate the real number of those placed at the disposal of the College.

It will be seen by the sequel of this Report that the courses prescribed for scholarship examinations are both special and extensive, whilst as President of this College I have constant means of knowing that merit alone is allowed by the examiners as the ground of their being awarded. They have, therefore, in various instances, not been appropriated.

In order to afford some idea of the nature and extent of the collegiate courses pursued in this College I subjoin the following outlines (distinct from the digest in the Appendix) of what the students are required to do, in order to secure graduation in their different departments.

I am anxious to draw particular attention to this at the present time, inasmuch as there exist ideas regarding the non-necessity for collegiate residence and training, which all past and present experience directly falsifies.

I. FACULTY OF ARTS.

Students intending to proceed to the degree of B.A. must pass the matriculation examination before entering upon their college studies. This examination is prescribed by the College Council, and embraces the first and second books of Euclid, arithmetic, the elementary rules of Algebra and simple equations, translation from two Greek and two Latin authors, Latin prose composition, English grammar and composition, English history, and the outlines of ancient and modern geography. Candidates for literary and science scholarships of the first year are examined in more extensive courses of literature and science. In 1872, the subjects prescribed for these literary scholarships were, in Greek, four books of the *Iliad* of Homer, the *Ion* of Euripides, portions of the *Anabasis* of Xenophon, selections from Lucian, with an exercise in prose composition; and in Latin, the *Odes* of Horace, six books of the *Æneid* of Virgil, and portions of Cicero and Livy, with Latin prose composition. Candidates had also to translate from Greek and Latin passages not contained in the prescribed books. They were also examined in English composition, Roman history, and the histories of England and France, from A.D. 1066 to A.D. 1509. The subjects prescribed for science scholarships of the first year embraced Euclid, books 1, 2, 3, 4, and 6, with the definitions of the fifth book, geometrical exercises, Algebra to the end of quadratic equations, including the

binomial theorem, and the first principles of logarithms; and plane trigonometry.

In the first session of the undergraduate course in arts the students must attend lectures and examinations in mathematics, Greek, Latin, modern languages, and English. In certain classes it has been found difficult to carry on the work of instruction from some of the students being more advanced in knowledge than others; but this has been to some extent obviated by calling in the aid of the senior scholars. At the end of the session a general examination is held in each class, which must be passed by the student before he is permitted to enter upon the studies of the second year. The same remark applies to the other years of the undergraduate course.

As the scholarships awarded after matriculation are tenable for one year only, scholarship examinations are held at the beginning of the second year, which are open to all students who have completed the first year of the undergraduate course. These examinations embrace more extended courses of literature and science than those prescribed for the first year's scholarships. In the second session the student is required to attend a course of logic and another of natural philosophy, together with second courses of instruction on any two of the following subjects: Mathematics, Greek, Latin, and a Continental language.

Students intending to proceed to the degree of B.A. must present themselves in Dublin for the first university examination, unless prevented by illness or other unavoidable cause. The subjects of this examination prescribed for 1873 are: In Greek, Euripides—*Medea*; Xenophon—*Memorabilia*, book 1. In Latin, Horace—*Satires*; Cicero—*Ad Familiares* I., II., III., with prose composition in both languages. In modern languages, translation from two modern authors, either French, German, or Italian, with an exercise from English into the language selected. In mathematics, Euclid, books 1 to 4, book 6, and definitions of fifth book, arithmetic, algebra to the end of quadratic equations, together with the binomial theorem, geometrical and arithmetical progression, the nature and use of logarithms, and plane trigonometry to the end of the solution of triangles. In mathematical physics, mechanics, hydrostatics, optics, and elements of astronomy. Candidates for honors at the same examination are required to answer in formal logic as well as in the subjects of the pass course. They are afterwards examined in a more extended course of literature or science.

For the third session, the following subjects are prescribed: 1, English literature; 2, metaphysics, or history, or political economy; 3, chemistry; 4, zoology or botany. Students are at the same time not obliged to adhere strictly to this course, but are permitted to substitute for any one or two of the above subjects, honor courses on subjects taught in the undergraduate course. This permission is largely used, and honor courses are delivered by many of the professors.

At the end of the third year students are permitted to present themselves for the final degree examination at the Queen's University. The details of this examination will be found in the Queen's University Calendar for 1873, p. 4, and in the Belfast Queen's College Calendar for the same year, p. lxvii. For the degree of Master of Arts any bachelor of arts of one year's standing may offer himself for examination.

MEDICAL DEPARTMENT.

The medical students of this College pass through a rigorous training before they can acquire the degree of M.D. from the Queen's University. In the matriculation examination a knowledge of Latin, Greek, History,

Arithmetic, Algebra, two Books of Euclid, &c. is required, and it is not uncommon that several trials have to be made before a sufficient standard is attained.

Many of the subjects of the medical course serve also as means of mental training:—for instance, the attendance on lectures and examinations on the subjects of Modern Languages, Experimental Physics, Botany, Zoology, and Chemistry, and the University test of the knowledge acquired, are such as is generally admitted, it is desirable to add to the required study of Classics and Mathematics for Arts degrees.

Thus every medical undergraduate must submit to an efficient training in non-professional subjects. He is guided during his proper medical studies by the ordinary curriculum of study, but in addition he almost uniformly extends his study of many of these subjects, as a glance at the numbers attending the classes on different subjects will show. The fact that many of the Professors are also University examiners, enables them to secure much greater devotion to the subjects of study, and to exact a much more extensive knowledge of each than could possibly be required by examiners unacquainted with the character of the training through which each Candidate for a degree had passed.

The attendance at classes is recorded daily in roll-books which are regularly inspected by the College Council; explanation is required of every absence from a class, and the required certificates are withheld whenever the attendance has been so deficient as to have imperilled the acquisition of a knowledge of any subject of study. The University examinations are conducted, in the most practical and laborious manner in dissecting-rooms, hospitals, &c., and every security is thus given that none but well-qualified Candidates are presented for graduation.

ENGINEERING DEPARTMENT.

The regular or ordinary course for students of Civil Engineering in this College extends over three Sessions, and includes attendance on Mathematics, Experimental and Mathematical Physics, Chemistry; a course of Mineralogy, Geology, and Physical Geography, and Modern Languages, especially French, together with the various courses conducted by the Professor of Civil Engineering, which may be thus sketched out:—1. Geometrical Drawing, including the general principles of the accurate representation on flat surfaces of the forms and dimensions of solid objects, and including the art of perspective, together with practical drawing especially in relation to engineering and architectural subjects. 2. Surveying, Levelling, and Mensuration, including various operations of field work in measuring over the surface of land, and of office work in mapping, drawing, and calculating in connexion with such measurements. 3. A course of teaching planned so as to be suitable for the stage of advancement at which Students arrive in the third year of their collegiate attendance, and adapted to constitute an introduction to, or a scientific foundation for many of the chief subjects of study which are necessary or useful to the civil or mechanical engineer; to the architect, and to many other classes of artificers and practical men. Of these it may suffice to mention:—Strength and elasticity of materials and structures, bridges of various kinds, ornamental architecture, theory of hydraulics, and its application in practical water works, and subjects more particularly relating to mechanical engineering. The Students are engaged in practical work in the drawing class-room during their three entire sessions of attendance: most of them work very diligently there, and many attain to proficiency so as to be well prepared for doing good

service in offices, and otherwise in engineering business at once on leaving College. Many of the engineering students too, in addition to carrying out their attendance on the lectures of the Professor of Chemistry, have been very assiduous in acquiring a knowledge of practical chemistry by working in the laboratory under his direction, where they learn the methods of analyzing ores and other minerals, and acquire practice in chemical manipulation.

DEPARTMENT OF ENGLISH LAW.

The Professor of English Law, in conducting his department, has constantly kept in view the object of the Select Committee of the House of Commons in recommending the foundation of Chairs in Law in connexion with the Queen's Colleges, which, as they stated in their Report on Legal Education, was not merely to prepare Candidates for the Bar, and for the profession of Attorney and Solicitor, but to raise the standard of legal attainments amongst local practitioners, and especially to provide opportunities of legal education to qualify persons intended to fill administrative situations not strictly legal—a policy which has been since followed up by the Legislature conferring privileges, by way of inducement, on Candidates for the profession of Attorney and Solicitor, who shall avail themselves of these Schools of Law.

The Lectures are made auxiliary to the contemporaneous studies directed, and are accompanied by interrogation, independent of the General Examination and that for Honors. Such books, cases, and decisions, and portions of treatises are pointed out for reading as are considered by the Professor most useful in elucidating a branch of learning which is scarcely furnished with books exclusively intended for instruction; and no efforts have been spared to point out the peculiarities of the law in Ireland, whether proceeding from statutes or inherent diversity of practice, or to direct attention to the recent changes which have been introduced into the course of procedure.

From the first opening of the College to the present time the successive classes have spontaneously applied themselves with assiduity and perseverance to the various subjects of legal instruction, and several Non-Matriculated Students have from time to time availed themselves of the privilege afforded by the College Ordinances of attending detached Courses of the Lectures on selected subjects.

Under these circumstances, I am gratified at being able to give the assurance that the Faculty of Law has fully realized the objects of its founders, and that a further extension of its public benefits would ensue upon the adoption by Government of the suggestion made by the same Committee of the House of Commons that a preference should be given to candidates for situations in the Civil Service, not of a purely legal nature, who could produce testimonials of legal attainments from those institutions—a rule which would fully accord with the principle laid down in a recent report of another Committee in relation to the Civil Service.

DEPARTMENT OF POLITICAL ECONOMY.

The Professor of Jurisprudence and Political Economy (Mr. T. E. Cliffe Leslie) fills in reality two distinct and important Chairs, in the two distinct Faculties of Law and Arts. As Professor of Jurisprudence, he lectures, teaches, and examines in the general philosophy and history of law, in Roman Law, and in Constitutional and International Law. As Professor of Political Economy, he lectures, teaches, and examines Arts Students in that great subject. His instruction in Jurisprudence has the twofold pur-

poes and result of teaching legal philosophy and history, both as a branch of higher University Education, and as a preparation for the legal profession; and the duties of the Professor in this department, discharged as they are by Professor Leslie, would be sufficiently arduous if he had not also to fill the Chair of Political Economy, to which he devotes as much time and labour as though he had no other collegiate duties. The stipend and emoluments attached to this double Chair are altogether disproportionate to the abilities, attainments, and exertions it demands on the part of the Professor.

To these systematic courses of study, requiring residence, continuous attendance on lectures delivered by able and distinguished Professors, as well as to the strict class examination required daily, and at every step of the progress of the students, may be attributed their success and proficiency. Academic training and intercommunion, patient investigation of the laws of nature and the principles of induction, sound education in all the departments of science and literature, have, through the medium of this College, secured to this province educational blessings which justify its founders in having selected Ulster, and Belfast its capital, as the seat of this Northern College. Since its opening nearly 2,500 men have completed their courses of study within its walls, where they enjoyed advantages, which no processes of separate training could possibly have imparted to them.

It was no fault of the Legislature that the provisions made by Parliament for securing religious supervision and affording spiritual instruction to the students of the Queen's Colleges, were not as extensively taken advantage of as the original founders of the Colleges contemplated and desired. The Colleges Act and the statutes founded on it, afford to the Churches the power of having, under prescribed conditions, Deans of Residences appointed by Her Majesty to take oversight, as clergymen, of the students of their respective denominations. No doubt there exists a defect in the law which confines that power to students under twenty-one years of age, and resident in licensed boarding-houses. The reports of the four Deans of Residences of this College, made to the Visitors at their last visitation, will prove that, irrespective of this deficiency, great benefit is conferred on the students generally by the continued existence of recognised spiritual supervision over them, their names and residences being still furnished by the Registrar to each Dean at the opening of every session.

I have to express regret that the various Churches have not yet availed themselves of the powers assigned them both by the Colleges Act and the Statutes, to have halls or hostels licensed for the residences of the students of their respective denominations.

Recent communications to me have made me aware that this important subject is attracting attention in influential quarters. I therefore here quote the following sections of the Charter of the Queen's Colleges on the residences of students and the Deans of Residences—chap. 16 :—

“If the Bishop, Moderator, or constituted Authority of any Church or religious denomination shall notify to the President his

or their desire that there shall be a boarding-house specially licensed for the exclusive use of the students of such Church or denomination, and shall specially recommend persons applying for licence to establish the same, the President shall, in every such case, grant such licence, provided he shall obtain satisfactory evidence of the suitableness of the proposed establishment, and of its means of providing for the health and comfort of the students.

"In the case of Collegiate Students residing in a seminary or school which is under the special jurisdiction of the Bishop, Moderator, or the constituted Authority of any Church or religious denomination, the President shall, on receiving a notification from such authority, consider residence in such seminary or school as equivalent to residence in the house of a parent or guardian, and shall exempt such seminary or school from licence or inspection, but shall require the same attendance at entrance as in the case of a student residing with his parent or guardian.

"For the better maintenance of moral and religious discipline in the licensed boarding-house, such clergymen or ministers as We shall, from time to time, by warrant under our Sign Manual, appoint Deans of Residences, shall have the moral care and spiritual charge of the students of their respective creeds residing in the licensed boarding-houses.

"The College Council shall have power to assign lecture-rooms within the precincts of such College, wholly or in part, for the use of the Deans of Residences, for the purpose of affording religious instruction to the students of their respective creeds, and also to make rules concerning the days and times when such religious instruction shall be given therein, and for securing that the same shall not interfere with the general discipline of the College: Provided always, that no student shall be compelled by any rule of the College to attend any theological lecture or religious instruction other than is approved by his parents or guardians, and that no religious test shall be administered to any person in order to entitle him to be admitted a student of any such College, or to hold any office therein, or to partake of any advantage or privilege thereof.

"No clergyman or minister shall be competent to assume or continue to hold the office of Dean of Residences, unless approved of by the Bishop, Moderator, or constituted Authority of his Church or religious denomination."

These provisions rest on sound principles, recognising the right and power of the various Churches to have religious instruction administered to the students of their peculiar denominations, whilst allowing liberty to all to mix in harmonious union within the collegiate halls, where together they may imbibe scientific and secular instruction at the same fountains of knowledge, fitting them for all future intercourse in public and social life.

After twenty-four years experience since the inauguration of this College in 1849, I am enabled to bear unqualified testimony to the value and perfect practicability of united education. Never, on religious grounds, has any diversity of opinion, producing discord

or alienation appeared, but on the contrary, friendships have been formed and fostered amongst the students of opposite creeds, which, without interfering, in any instance, with religious conviction, have produced lasting and beneficial sentiments of mutual regard and personal respect. It is my pleasing duty to make a similar record, respecting the authorities of the College. We are greatly varied as to creed and denomination; and yet religious diversity never interferes with that friendly spirit which enables us, as gentlemen and fellow-labourers, to co-operate heartily in diffusing the blessings of education equally to all.

This College continues to hold a distinguished place in sending into the arenas of scientific and literary conflict a number of men who annually carry high places, some of them the highest, in the examinations instituted in London and Dublin for the various departments at home and abroad, civil and military, naval, legal, and medical.

In the different professions and callings of life, multitudes of the youths who studied in this College are, by the positions they have asserted, shedding lustre on their Alma Mater, laying the foundations of their future fortune, and circulating throughout society the advantages flowing from sound education, practical knowledge and Christian principle.

The existence of this College in the populous and important province of Ulster, whilst from the outset it raised the standard of education immensely throughout its academies and schools, continues to exercise amongst all public teachers and private tutors a most wholesome and stimulating rivalry in preparing youths for entrance, and for the prosecution of their collegiate courses so as to reflect credit on themselves and on this establishment.

The tables in this report will show the remarkable alteration that has taken place in the ratio between matriculated and non-matriculated students from the year in which the Queen's University was established in order to unite and consolidate the three Queen's Colleges. From the first, the statutes of the Colleges had secured internal unity of design and action which is difficult of attainment through mere affiliation, but the organization of the Queen's University, aggregating the Cork, Belfast, and Galway Colleges made, almost immediately, the pursuance of matriculation and of the University courses to be the general rule.

Convinced that the Queen's Colleges could never have produced the same results which now distinguish them, without their University privileges, I am enabled to strengthen my opinion by the following extract taken from the address of the Marquis of Kildare, the Chancellor of the University, at the conferring of degrees in last October :—

"Those amongst the students of our three colleges who have either arrived at the middle stage of their career, or who have brought it to a close, are examined together under the directions of the Senate; and at these examinations, of which the principal has been held within the past fortnight, 363 candidates presented themselves within this year.

Of these 114 were in the Faculty of Arts, 216 in the Faculty of Medicine, 2 in the Faculty of Law, and 29 in Engineering. Of the candidates in the Faculty of Arts 55 presented themselves at the previous examination, which is held at the end of the second year of their study, and of these 41 have satisfied the examiners. Forty-five underwent the final examination for the degree of Bachelor in Arts, of whom 42 passed, and 14 have been examined for the higher degree of Master, all of whom, I am happy to say, were deemed qualified. In the Faculty of Medicine there were 138 candidates for the previous examination, and 78 for the final examination for the degree of M.D. Eighty-eight of the former and 67 of the latter have satisfied the examiners. Fifty-three candidates presented themselves for the further degree in this Faculty of Master in Surgery, and 41 for the Diploma in Midwifery. Forty-two of the former and 30 of the latter came up to the requirements of the examiners. In the Faculty of Law, two candidates presented themselves for the degree of LL.B.; both men passed; and the higher degree of LL.D. will be conferred on a third candidate, who is resident in India, and who has submitted to the examiners evidence of his proficiency, which they have reported to be satisfactory. In the department of civil engineering, 19 candidates presented themselves at the previous examination, of whom 13 have satisfied the examiners, and 11 at the degree examination, of whom all have passed."

The new library and anatomical rooms of the College supplied by Parliamentary grants, fully justify, by their perfect adaptation to their respective purposes, the earnestness of the Collegiate authorities in asking for them, and the wisdom of the Government in having them provided. But I cannot omit once more expressing my most earnest desire and hope that an increased grant for the steady supply of books to the Library may be made through the sanction of your Majesty's Ministers, in order to restore to the Annual Grant for the maintenance of the College the amount that was appropriated, some years ago, to assist in augmenting by a small amount the salaries of the Professors. The sum thus subtracted was no doubt applied to a most necessary purpose; but I have always lamented that this could not have been effected without trenching on an allowance so essentially necessary to found and extend a Library suited to the progress of Science, Literature, and Art, and adapted to the requirements of a College embracing so many departments. The desirable object of the establishment of a proper Library furnishing books for consultation and loan to so large a number of Professors and Students, a permanent repository of knowledge, suited to and worthy of this great centre of intelligence and industry, I trust to see speedily accomplished.

After mature consideration, I feel it due to the great interests of science and sound instruction to record, just now, the conviction I entertain, that if the Queen's Colleges in Ireland are to form part of the educational machinery of the empire, they ought not to be allowed to remain in their present position crippled in comparison with most similar Colleges, and in many ways insufficiently equipped to keep place with the advancement of learning. The salaries of the Professors, at first placed on a scale much too low, are now, through the nearly doubled expense of every necessary of life, found inadequate to reward men of ability and distinction

for their laborious services, or to meet their wants as gentlemen and members of society. Neither are they able to command what some of them absolutely pay for themselves, viz., the services of assistants (such as are provided for in the Scotch Colleges) to enable them to overtake their duties. The scale of payment in every public and industrial department is most properly and advantageously raised, whilst the men, who, by their intellectual resources, expensively and laboriously acquired are expected to educate the public mind in the highest departments of science and literature, remain overlooked, to bear the anxieties, and to struggle with the difficulties of an insufficient amount for personal, official and family support.

This question demands speedy consideration if we are to secure a continuance of able and distinguished Professors, or to maintain the various departments of the College in a thoroughly efficient condition.

During the session 1872 the various exhibitions founded by private munificence were awarded in accordance with the conditions prescribed by the donors, and to the most deserving competitors.

With the exception of a very few cases of violation of discipline which were suitably and profitably dealt with either by myself or the Council, the conduct of the great body of the students manifested zeal, regularity, and great industry.

In the appendix which I have furnished will be found ample information respecting the condition of the College, with the amount of expenditure, fees received and paid to each Professor, and also an enlarged digest of the various subjects of study and of lecture, and the papers used at the different examinations.

All of which is testified on behalf of the College by your Majesty's most dutiful servant,

P. SHULDHAM HENRY.

QUEEN'S COLLEGE, BELFAST,
1st May, 1873.

APPENDIX.

APPENDIX, No. 1.

*Appendix,
No. 1.*

QUEEN'S COLLEGE, BELFAST, and QUEEN'S UNIVERSITY.

*Queen's
College,
Belfast, and
Queen's
University*

THE COLLEGE is a Corporation under the name and style of "QUEEN'S COLLEGE BELFAST." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 86, intitled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act, it was determined to found three Colleges. Belfast, Cork, and Galway, were selected as the sites of these Colleges, and on the 30th day of December, 1845, letters patent were issued, incorporating them. The Presidents and Vice-Presidents of the three Colleges were formed into a Board, called "The Board of Queen's Colleges," for the purpose of drawing up the statutes and arranging the system of education to be pursued in them.

On the 4th of August, 1849, the Professors were appointed, and the Colleges opened for the reception of students on the 30th October, in the same year.

Letters patent, constituting the statutes, were issued on the 11th of December, 1849, and a further charter was issued in the year 1863.

THE COUNCIL OF THE COLLEGE.

The President.

The Vice-President.

J. Cuming, M.D., Professor of Medicine.

W. Nesbitt, M.A., Professor of Latin.

James Thomson, LL.D., Professor of Civil Engineering.

C. MacDonall, LL.D., Professor of Greek.

P. Redfern, M.D., Professor of Anatomy.

J. Purser, M.A., Professor of Mathematics.

PROFESSORS.

The Greek Language, . . .	Charles MacDonall, LL.D., M.D., &c.
The Latin Language, . . .	William Nesbitt, M.A.
History and English Literature, . . .	Charles Duke Yonge, B.A. Oxon.
Modern Languages, . . .	A. L. Meissner, PH.D.
Mathematics, . . .	John Purser, M.A., M.R.I.A.
Natural Philosophy, . . .	Joseph David Everett, M.A., D.C.L.
Chemistry, . . .	Thomas Andrews, M.D., F.R.S., M.R.I.A.
Natural History, . . .	Robert O. Cunningham, M.D., F.L.S.
Logic and Metaphysics, . . .	John Park, M.A.
Civil Engineering, . . .	James Thomson, LL.D., M.I.C.E.E.
Agriculture, . . .	John F. Hodges, M.D., F.C.S.
Anatomy and Physiology, . . .	Peter Redfern, M.D. Lond., F.R.C.S.
Practice of Medicine, . . .	James Cuming, M.D.
Practice of Surgery, . . .	Alexander Gordon, M.D.
Materia Medica, . . .	James Seaton Reid, M.D.
Midwifery, . . .	R. F. Dill, M.D.
English Law, . . .	Echlin Molynaux, A.M.
Jurisprudence and Political Economy, . . .	T. E. Cliffe Leslie, LL.B.

Appendix,
No. 1.Queen's
College,
Belfast, and
Queen's
University.

OFFICE BEARERS.

Curator of Museum, . . .	The Professor of Min., Geo., and Nat. Hist.
Registrar, . . .	Rev. Richard Oulton, B.D.
Librarian, . . .	Rev. George Hill.
Bursar, . . .	Alexander Dickey, Esq.

DEANS OF RESIDENCES.

	Appointed.
Irish Association of Non-Subscribing Presbyterians, . . .	Rev. John Porter, . . . 1852
General Assembly of the Presbyterian Church in Ireland, . . .	Rev. Josias Leslie Porter, D.D., LL.D., 1866
Wesleyan Methodists, . . .	Rev. Robert Crook, LL.D., . . . 1871
Church of Ireland, . . .	Rev. Samuel E. Bosby, LL.D., . . . 1872

The Deans are designated as they wish themselves to be called.

The students of the College are either Matriculated or Non-matriculated. All the courses for Matriculated students in Arts, including the Department of Civil Engineering, and also in the Faculties of Medicine and of Law, will be found in the Calendar, which is published annually.

Non-matriculated students, on paying the regulated class fees, and signing an engagement to observe order and discipline in the College, are permitted, without undergoing a preliminary examination, to attend any separate course or courses of Lectures; but are not permitted to become candidates for Scholarships or Prizes, or to enjoy other privileges of the Matriculated students.

Students in any of the Faculties can be admitted *ad eundem* from the other Queen's Colleges, or from any University capable of granting degrees.

COLLEGIATE SCHOLARSHIPS.

In the FACULTY OF ARTS—30 Junior Scholarships, of £24 each, are awarded to Undergraduates—15 for proficiency in Literature, and 15 for proficiency in Science; also, 8 Senior Scholarships, of £40 each, to Graduates, one being limited to students who have also completed the course for the degree of LL.B.; and 5 Scholarships, of £20 each, to Engineering Students.

In the FACULTY OF MEDICINE—8 Junior Scholarships, of £25 each, are awarded.

In the FACULTY OF LAW—3 Junior Scholarships, of £20 each, are awarded.

SCHOLARSHIPS AWARDED IN THE SEVERAL FACULTIES, 1870-71.

- 8 Senior Scholarships awarded.
- 20 Junior Scholarships in Arts awarded.
- 4 Engineering Scholarships.
- 8 Medical Scholarships.
- 3 Law Scholarships.

1871-72.

- 8 Senior Scholarships awarded.
- 20 Junior Scholarships in Arts awarded.
- 5 Engineering Scholarships.
- 7 Medical Scholarships.
- 3 Law Scholarships.

By an order of Her Majesty in Council, of 21st May, 1855, applying to the Civil Service, it is ordained that "every person nominated to a junior situation should obtain a certificate of qualification before entering on his duties." The ordinary classes in Queen's College embrace the branches required in the Examinations for the Civil Service, and also in the Examination for students intending to become candidates for commissions in the Royal Artillery and Engineers, and for appointments to the Civil Service of India, both of which are now thrown open to public competition.

QUEEN'S UNIVERSITY IN IRELAND.

Appendix,
No. 1.

The charter founding the Queen's University in Ireland received the Royal sanction in the year 1850, and it provides that its Senate should have the power of conferring upon the students of the Queen's Colleges of Belfast, Cork, and Galway, such degrees and distinctions, in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. It further ordains that any of the students of the three Queen's Colleges, who shall have obtained such degrees in any of the several Faculties of Arts, Medicine, and Law, as shall be conferred by the Chancellor and Senate of the Queen's University, shall be fully possessed of all such rights, privileges, and immunities, as belong to similar degrees granted by other Universities or Colleges, and shall be entitled to whatever rank and precedence is derived from similar degrees granted by other Universities.

By the charter of the Queen's University, candidates for Degrees in Medicine are required to have attended at least two courses of Medical Lectures in some one of the Queen's Colleges. For the remainder of the courses of Medical Lectures, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

The Chancellor and Senate also have the power of admitting, by special grace, Graduates of other Universities to similar and equal degrees.

In order to obtain a degree or diploma in the Queen's University it is necessary to enter the College as a Matriculated Student, to pass the entrance or Matriculation Examination, and to pursue a fixed course of study.

The Matriculated Students may be classified as follow:—

I.	Those intending to proceed to the Degrees of A.B. and A.M.
II.	" " Degree of M.D.
III.	" " Diploma of Elementary Law.
IV.	" " Degrees of LL.B. and LL.D.
V.	" " Diploma of Civil Engineering.
VI.	" " Diploma of Surgery.

THE SENATE.

Chancellor.—The Most Honorable the Marquess of Kildare, M.A. (Oxon.)

Vice-Chancellor.—Sir Dominic J. Corrigan, Bart., M.D., M.P., Physician in Ordinary to the Queen in Ireland.

The Right Hon. David R. Pigot, Lord Chief Baron of the Exchequer, M.B.E.A., &c.

The Rev. P. Shuldham Henry, D.D., M.B.E.A., President Queen's College, Belfast.

Sir Robert Kane, F.R.S., M.B.E.A., &c., President Queen's College, Cork.

Edward Berwick, B.A., President Queen's College, Galway.

Sir Richard Griffith, Bart., LL.D., M.B.E.A., Commissioner of Public Works.

Major-General Sir Thomas Askew Larcom, B.E., F.C.S., LL.D., F.R.S., M.B.E.A., &c.

James Gibson, A.M., Q.C., M.B.E.A., Barrister-at-Law.

The Right Hon. James Henry Monahan, Lord Chief Justice of the Common Pleas.

Robert Adams, A.M., M.D., F.R.C.S.

The Right Honorable Sir Robert Peel, Bart., M.P.

The Right Reverend the Lord Bishop of Killaloe, D.D.

His Grace the Archbishop of Dublin, D.D.

Thomas A. Shillington, Esq., J.P.

The Lord Talbot de Malahide, F.R.S., M.B.E.A.

The Lord Clermont, D.L.

Right Honorable William Monsell, M.P.

Right Honorable Lord O'Hagan, Lord Chancellor of Ireland.

William K. Sullivan, esq., F.R.D.

David Ross, M.A., LL.D.

William MacCormac, M.A., M.D.

Thomas William Moffett, LL.D.

Secretary.—G. Johnstone Stoney, M.A.—Office, Dublin Castle.

The Senate holds its sitting in Dublin Castle, where the examinations of the students of the three Colleges, for Graduation and University Exhibitions, are annually conducted by Examiners appointed by the Senate from year to year.

APPENDIX, No. 2—continued.

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, in each Year—continued.

CLASS.	SESSION.											
	'60-61.	'61-62.	'62-63.	'63-64.	'64-65.	'65-66.	'66-67.	'67-68.	'68-69.	'69-70.	'70-71.	'71-72.
Greek—1st year, . . .	69	81	83	68	79	63	49	47	43	41	37	37
" 2nd " . . .	25	49	63	44	40	49	21	19	24	11	22	19
" Higher, . . .	4	7	7	9	12	6	4	5	6	7	6	6
Latin—1st year, . . .	69	84	83	65	78	64	50	46	43	44	39	37
" 2nd " . . .	23	49	60	40	33	44	40	34	37	32	32	21
" Higher, . . .	2	6	6	8	7	4	6	7	9	11	6	7
The English Language, . . .	72	85	85	70	80	67	49	46	43	43	37	36
History, . . .	28	5	8	6	4	4	5	9	6	16	12	19
English Literature, . . .	30	41	52	48	43	52	41	32	35	39	27	
Modern Languages (French, German, Italian), . . .	140	124	110	99	110	113	109	115	96	94	92	98
Senior " . . .	10	54	43	26	38	36	48	33	32	52	37	30
The Celtic Languages, . . .	The Lectures in each Session open to the Public.											
Mathematics—1st year, . . .	83	93	103	85	92	75	62	58	66	57	44	50
" 2nd " . . .	13	13	15	20	17	19	12	22	24	22	17	10
" Higher, . . .	3	—	5	6	4	4	6	33	7	8	8	6
Nat. Philosophy—Higher Class, . . .	—	—	—	—	5	4	—	9	5	7	3	4
" Mathematical Physics, &c., . . .	64	67	72	69	60	68	56	51	46	52	46	32
" Experimental Physics, . . .	87	86	94	96	87	120	104	90	85	78	86	90
Natural Philosophy applied, . . .	4	—	2	5	8	7	4	6	10	5	8	8
Chemistry, . . .	64*	89	89	81	93	95	91	84	98	84	106	103
Practical Chemistry, . . .	21	20	24	28	44	37	44	51	44	30	44	43
Laboratory, . . .	12	15	15	8	14	16	16	18	17	15	16	17
Zoology, . . .	37*	57	60	80	82	84	82	83	75	51	75	75
Botany, . . .	40*	56	62	80	92	27	50	51	60	36	80	61
Physical Geography, . . .	30	74	7	—	—	—	—	—	—	—	—	—
Logic, . . .	35	65	66	57	49	68	52	43	46	38	40	29
Metaphysics, . . .	24	22	34	40	40	41	39	29	33	30	20	14
Higher Logic, . . .	—	10	12	25	14	24	33	22	21	15	15	9
Mineralogy and Geology, . . .	7†	11	10	12	14	15	5	11	6	10	5	8
Engineering, 1st year, . . .	9	10	11	15	15	14	12	8	13	11	5	12
Engineering, 2nd year, . . .	4	6	11	8	12	10	8	10	4	9	8	3
Engineering, 3rd year, . . .	—	—	3	7	7	7	7	6	9	5	3	8
Theory of Agriculture, . . .	6	6	6	—	—	—	—	—	—	—	—	—
Practice of Agriculture, . . .	3	1	—	—	—	—	—	—	—	—	—	—
Diseases of Farm Animals, . . .	2	1	—	—	—	—	—	—	—	—	—	—
Medical Jurisprudence, . . .	14	18	16	25	30	28	35	33	35	34	41	37
Anatomy, . . .	83	83	83	87	99	109	127	120	130	117	142	136
Practical Anatomy, . . .	80	85	91	96	126	124	149	159	160	140	182	157
Practice of Medicine, . . .	25	42	27	36	44	48	67	70	57	59	68	57
Practice of Surgery, . . .	81	53	53	46	46	55	77	81	75	61	72	55
Materia Medica, . . .	33	39	37	29	38	47	47	58	46	38	49	43
Midwifery, . . .	26	36	22	34	19	23	36	37	48	41	45	46
Law of Property, . . .	—	—	—	—	—	—	—	—	—	—	—	—
Equity and Bankruptcy, . . .	—	—	—	—	—	—	—	—	—	—	—	—
Common and Criminal Law, . . .	16	14	12	12	14	19	13	20	17	34	27	21
Evidence and Pleading, . . .	—	—	—	—	—	—	—	—	—	—	—	—
Political Economy, Arts, . . .	10	8	18	17	20	15	18	8	10	14	12	9
Civil Law; Constitutional, . . .	—	—	—	—	—	—	—	—	—	—	—	—
Colonial, and International Law; Jurisprudence, . . .	10	12	11	10	11	19	11	18	19	20	25	17
Arabic, . . .	—	—	—	—	—	—	—	—	—	—	—	—
Hindustani, . . .	3	2	3	—	—	—	—	—	—	—	—	—
Sanskrit, . . .	3	4	5	4	4	—	—	—	—	—	—	—
Operative Surgery, . . .	—	—	11	2	—	18	23	12	10	17	13	23

* No Arts Students this Session, owing to change of Statutes.

† Not now required in third year Arts.

‡ No Engineering Students this Session, owing to change of Statutes.

APPENDIX,

RETURN of the AMOUNT of FEES received by each

Professor of	1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.
	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Greek, . . .	*88 10	83 0	50 0	27 5	38 5	46 5	51 15	44 15	51 0	78 0
Latin, . . .	*78 15	79 0	50 10	31 5	38 5	44 5	47 15	39 15	53 0	67 0
English History and Literature, . . .	50 5	50 5	47 10	31 5	43 5	45 5	50 5	43 15	57 10	69 0
Logic & Metaphysics, . . .	6 0	-	59 5	34 5	37 15	41 0	41 15	43 5	46 15	63 10
Mathematics, . . .	118 15	97 10	69 15	43 0	54 10	59 0	60 10	62 15	69 10	97 10
Natural Philosophy, . . .	79 5	70 15	90 10	47 0	78 15	76 15	89 10	62 15	73 0	66 10
Chemistry, . . .	85 5	104 0	117 5	91 10	111 10	131 15	105 10	133 0	113 10	147 5
Practical Chemistry, . . .	143 0	170 0	195 15	230 10	228 0	250 0	256 0	181 0	206 0	262 10
Anatomy and Physiology, . . .	30 10	69 0	70 15	50 15	55 0	76 15	50 10	56 0	52 10	108 5
Practical Anatomy, . . .	97 0	84 0	63 0	50 0	61 0	85 0	74 0	88 0	96 0	120 0
Natural History and Botany, . . .	-	7 10	24 15	17 15	20 15	18 0	12 10	37 0	20 5	21 15
Modern Languages, . . .	30 0	21 0	35 15	18 15	28 0	14 10	29 5	22 10	31 15	28 10
Mineralogy and Geology, . . .	32 0	29 0	37 0	23 0	20 0	16 0	21 0	27 0	21 0	25 0
Jurisprudence and Political Economy, . . .	18 0	24 10	22 0	14 0	17 15	21 0	13 10	37 0	22 0	22 15
English Law, . . .	15 10	41 0	49 5	22 0	46 0	32 15	26 0	25 10	40 5	31 5
Civil Engineering, . . .	17 0	31 0	32 0	18 0	30 0	30 0	56 0	43 10	26 0	37 0
Agriculture and Medical Jurisprudence, . . .	41 0	21 10	36 0	51 0	43 0	43 0	74 0	42 10	34 0	45 0
Practice of Medicine, . . .	22 0	28 0	26 0	29 0	33 0	43 0	45 0	20 0	34 0	39 0
Surgery, . . .	28 0	18 0	23 0	27 0	31 0	33 0	44 0	24 0	12 0	28 0
Midwifery, . . .	-	-	-	-	-	-	-	32 0	25 0	25 0
Teacher of Drawing, . . .	-	-	-	-	-	-	-	-	-	-

* In the Session of 1849-50, Medical Students were required to attend the Greek and Latin Classes, but have since been exempt from attending either class.

† Professor McCosh was appointed in Session 1851-52, and taught and received fees from Students properly belonging to the previous Session.

Queen's College, Belfast, March, 1873.

Appendix,
No. 4.

APPENDIX,

Expenditure of One Year's Additional Grant.

ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT

1. Library of Ancient and Modern Literature and Philology:

Ancient Classical Languages and Philology,	£ s. d.
English History and Literature,	23 18 8
Foreign Modern Languages,	18 9 2
Works of General Interest, &c.,	10 5 5
	68 9 11
	<hr/>
	121 3 0

2. Libraries, Museum, &c., Mathematical, Physical, and Chemical Sciences:

Mathematical and Physical Libraries,	£ s. d.
Chemical Library,	35 1 7
Museum and Cabinet of Physical Science,	13 0 3
„ Laboratory, Chemical Science,	39 1 5
	57 18 5
	<hr/>
	124 16 6

No. 3.

Professor in the Queen's College, Belfast, in each Year.

1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.
£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
*93 5	*131 15	*186 0	*187 15	*231 0	233 10	212 0	131 0	121 0	127 0	160 0	114 0	103 0
†90 0	127 15	185 0	185 15	211 0	230 10	202 0	167 0	152 0	155 0	154 0	132 0	108 0
94 15	117 3	155 10	164 5	163 10	162 10	131 10	143 10	130 10	107 10	121 0	123 0	102 0
39 0	58 10	100 5	134 10	173 10	143 0	183 10	184 10	140 10	129 10	117 0	98 10	70 0
132 10	156 0	183 5	211 5	201 0	200 0	173 0	143 0	135 0	122 0	148 0	117 0	108 0
61 5	100 10	178 15	194 10	163 0	186 0	208 0	168 0	192 0	183 0	177 0	164 0	187 0
184 0	167 0	195 15	216 5	213 10	294 10	252 0	277 10	299 0	284 10	242 10	276 0	324 0
307 0	427 10	432 10	425 10	463 10	567 10	544 0	643 14	652 8	731 18	592 1	668 10	706 10
94 10	70 0	96 10	120 5	157 0	170 0	144 0	154 0	165 0	133 0	164 0	142 0	128 0
150 10	277 0	319 5	270 15	231 0	278 0	247 0	268 0	260 0	245 0	255 0	226 0	244 0
24 15	11 10	16 5	20 10	22 0	25 0	24 0	9 0	20 0	7 0	10 0	20 0	12 0
36 10	28 10	25 15	37 10	30 0	51 0	51 0	46 0	37 0	40 0	56 0	65 0	39 0
28 0	20 0	25 0	21 0	10 0	20 0	25 0	23 0	35 0	31 0	43 0	56 0	34 0
24 15	32 0	40 15	70 0	82 0	97 0	79 0	68 0	70 0	78 0	66 0	51 0	60 0
47 0	43 0	£44 0	£36 15	48 0	55 0	40 0	67 0	63 0	68 0	61 0	73 0	77 0
44 0	37 0	£4 10	46 0	59 0	74 0	77 0	103 0	103 0	62 0	96 0	103 0	94 0
65 10	79 13	84 12	90 11	73 0	02 0	94 0	137 0	144 0	131 0	115 0	134 0	113 0
30 0	60 0	69 0	70 0	59 0	73 0	03 0	86 0	71 0	39 0	73 0	77 0	84 0
25 0	48 0	63 0	35 0	66 0	38 0	42 0	64 0	72 0	93 0	78 0	79 0	94 0
22 0	-	-	-	-	-	-	-	-	-	-	-	-

* Besides for Sanskrit and Hindustani, 1858-59, £35; 1860-61, £22 10s.; 1861-62, £25; 1862-63, £32 10s.; 1863-64, £20; 1864-5, £20.

† Besides for Arabic in 1853-54, £5.

‡ The Professor of Anatomy pays to his Demonstrator a portion of the fees for Practical Anatomy.

§ No endowment for Medical Jurisprudence. Professor Hodges delivers the lectures, receiving only class fees.

JOHN WILIE, *Bursar*.

No. 4.

Appendix,
No. 4.

to the Queen's College, Belfast, ending 31st March, 1871.

3. Libraries, Museum, and Collection of Objects of the Department
of the Natural Sciences:

Library of Natural History, and Geology and Mineralogy,	£ s. d.
Museum of Natural History, and Geology and Mineralogy,	22 5 11
	67 4 11
	<u>89 10 10</u>

4. Libraries, Museums, and Collections of Objects of the Department
of Engineering:

Library of Engineering,	£ s. d.
Instruments and Collections of Engineering,	5 9 4
	27 13 9
	<u>33 3 1</u>

Expendi-
ture of One
Year's
Additional
Grant.

Appendix,
No. 4.

APPENDIX, No. 4—continued.

Expendi-
ture of One
Year's
Additional
Grant.ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT
to the Queen's College, Belfast, ending 31st March, 1871—
continued.

5. Museum and Library of Medical Science:

	£	s.	d.
Library of Medical Works,	35	14	9
Anatomical and Pathological Museums, &c.,	86	8	6
Surgical Museum,	2	1	0
Medical Jurisprudence,	15	17	8
Midwifery,	—	—	—
Prac. of Medicine,	—	—	—
Materia Medica,	19	1	8
	159	1	7

6. Library of Metaphysical, Legal, and Economical Science:

Law, Jurisprudence, and Political Economy,	21	12	10
Metaphysics,	18	10	3
	38	3	3

7. Printing, Stationery, Advertising, Postages, Office Expenses, &c., 318 10 8

8. Heating and Lighting, 160 9 0

9. Grounds, 92 4 3

Balance in Bank of Ireland Office, 31st March, 1871, . 371 18 5

Total, 1,507 0 9

Amount of One Year's additional Grant, 1,000 0 0

College and Matriculation Fees, 132 19 4

Balance in Bank, 31st March, 1870, 374 1 5

Total, 1,507 0 9

The Accounts of the College up to 31st March, 1871, have been examined and found correct by the Commissioners for Auditing the Public Accounts.

March, 1873.

JOHN WYLLIE, *Barrow.*

APPENDIX, No. 3.

GENERAL CLASS EXAMINATIONS, QUEEN'S COLLEGE, BELFAST.

	Session 1878-79.		A.M.	P.M.	Session 1879-80.		A.M.	P.M.
The English Language,	Saturday,	January 7	—	12-4	Saturday,	January 8	—	12-4
Logic,	Saturday,	February 4	9-10	—	Saturday,	February 9	9-10	—
Mineralogy and Geology, and Physical								
Geography,	Sunday,	February 10	10-1	—	Friday,	February 20	10-1	—
Botany,	Saturday,	February 25	10-1	—	Saturday,	February 24	9-10	—
Metaphysics,	Tuesday,	April 4	9-10	and 1-2	Tuesday,	March 20	9-10	and 1-2
English Literature,	Wednesday,	April 6	9-10	and 1-2	Wednesday,	March 27	9-10	and 1-2
History,	Thursday,	April 8	—	—	Thursday,	March 28	9-10	—
Practical Anatomy,	Friday,	April 10	9-10	—	Saturday,	April 20	9-10	—
Midwifery,	Wednesday,	April 10	9-10	—	Friday,	April 20	9-10	—
Anatomy and Physiology,	Thursday,	April 17	—	1-2	Saturday,	April 27	—	1-2
Practice of Medicine,	Friday,	April 19	9-10	and 1-2	Sunday,	April 28	9-10	and 1-2
Medical Jurisprudence,	Friday,	April 20	9-10	—	Monday,	April 29	—	—
Practice of Surgery,	Sunday,	April 22	—	1-2	Tuesday,	April 30	—	1-2
Natural Jurisprudence,	Saturday,	April 26	9-10	—	Wednesday,	June 4	9-10	—
Natural Philosophy,	Tuesday,	May 24	9-10	and 1-2	Saturday,	June 6	9-10	—
Greek (First Year),	Wednesday,	May 25	9-10	—	Wednesday,	June 10	9-10	—
(Second Year),	Thursday,	June 1	9-10	—	Thursday,	June 9	9-10	—
Latin (First Year),	Thursday,	June 1	9-10	—	Thursday,	June 9	9-10	—
(Second Year),	Wednesday,	May 21	9-10	—	Wednesday,	June 8	9-10	—
Engineering, 1st, 2nd, and 3rd years,	Thursday,	June 1	9-10	—	Thursday,	June 8	9-10	—
Office and Padwork,	Wednesday,	May 26	—	2-4	Wednesday,	June 7	—	2-4
Mathematics,	Friday,	June 3	9-10	and 1-2	Friday,	June 7	9-10	and 1-2
Modern Languages,	Saturday,	June 9	9-10	—	Thursday,	June 6	9-10	—
Chemistry,	Monday,	June 5	9-10	—	Monday,	June 10	9-10	—

General Examinations of Students in Law and in Political Economy, and of Students attending Special Classes—History, Practical Chemistry, Midwifery, and Physics—at the close of the Session respectively.

Appendix,
No. 6.Lectures
delivered
by Profes-
sors.

APPENDIX,

RETURN of the NUMBER of LECTURES delivered by each

	1849, 1850.	1850, 1851.	1851, 1852.	1852, 1853.	1853, 1854.	1854, 1855.	1855, 1856.	1856, 1857.	1857, 1858.	1858, 1859.	1859, 1860.	1860, 1861.	1861, 1862.
Professor of—													
Greek, . . .	135	232	244	246	236	240	234	235	236	250	500*	460*	440*
Latin, . . .	162	197	215	221	189	196	232	230	230	275	398	234	234
History and English Literature, . .	35	55	98	91	104	100	105	105	99	110	123	92	154
Modern Languages,	208	330	324	307	306	305	319	340	369	307	340	372	372
Celtic, . . .	6	6	6	6	6	6	6	6	6	6	6	6	—
Mathematics, . .	135	256	333	248	248	320	346	322	330	400	400	370	370
Natural Philosophy	122	257	233	209	256	250	255	307	300	300	242	242	213
Chemistry, . .	134	136	137	129	132	130	158	142	142	140	132	132	132
Practical Chemistry	35	36	36	36	36	38	36	36	34	36	36	38	36
Natural History, .	120	120	153	137	139	138	142	140	143	140	140	140	140
Mineralogy and Geology, . . .	—	86	54	59	54	55	49	59	52	52	52	52	52
Logic & Metaphysics	—	—	78	142	176	175	184	177	179	187	140	158	194
Civil Engineering, .	134	138	140	138	140	136	147	118	100	194	196	220	198
Agriculture, . .	172	206	205	212	209	213	218	185	190	166	166	156	156
Anatomy and Phy- siology, . . .	115	118	115	115	114	115	117	113	115	115	115	112	108
Practice of Medicine,	95	93	92	92	93	94	94	83	75	95	95	95	95
Practice of Surgery,	93	94	93	91	91	92	94	94	94	94	94	94	94
Materia Medica, .	92	91	91	93	90	90	92	80	84	84	84	84	84
Midwifery, . . .	92	92	92	91	90	93	93	93	93	86	80	80	80
English Law, . .	24	48	72	96	96	96	96	6	96	96	72	72	96
Jurisprudence & Po- litical Economy, .	24	48	96	120	120	120	120	120	96	96	120	120	120

The above Return gives the number of Meetings of one hour each, in each Class. The system course; in some classes these examinations are held daily; in others on fixed days of the week. The Professors also conduct the General Scholarship Examinations; and some of them, in

* Including about 110 on

No. 6.

Professor in the Queen's College, Belfast, in each YEAR.

1862, 1863.	1863, 1864.	1864, 1865.	1865, 1866.	1866, 1867.	1867, 1868.	1868, 1869.	1869, 1870.	1870, 1871.	1871, 1872.	REMARKS.
360*	350	350	350	350	340	340	300	300	300	
234	230	324	324	324	319	319	319	320	320	
146	140	167	167	167	148	148	148	150	150	Besides correcting about 650 exercises.
360	336	356	358	406	406	406	406	400	400	
-	-	-	-	-	-	-	-	-	-	Open to the Public without charge.
316	325	330	317	317	296	296	296	300	300	Besides three hours each week on which the Senior Scholar meets the Junior Division.
182	180	180	190	190	288	288	288	300	300	In addition, arranging apparatus, which occupies as much time as the lectures.
132	130	130	130	130	130	130	130	130	130	In addition, superintending the working pupils, of whom from eight to twelve are admitted each year by examination to the laboratory without charge.
36	36	35	55	55	55	55	55	55	55	Including lectures in Physical Geography, delivered free to all students.
140	140	140	140	140	140	140	140	140	140	In addition, daily attendance as Curator in the Museum.
52	52	52	52	52	52	52	52	52	52	In addition, criticising very many essays in each session.
208	195	195	195	195	195	195	195	195	195	Including practical work under the direction of the Professor.
328	319	236	247	247	247	247	247	250	250	Including lectures on Medical Jurisprudence, for which there is no salary.
50	50	50	41	41	35	35	35	35	35	In addition, daily practical teaching in the dissecting-room for three hours by the Professor, and four hours by his assistant.
108	224	281	260	260	260	280	280	260	260	
95	95	95	95	95	95	95	95	95	95	
93	93	93	93	93	93	93	93	93	93	Besides about twenty-five lectures each session on Operative Surgery.
84	84	84	84	84	80	80	80	80	80	
76	76	76	76	76	76	76	76	76	76	Besides practical instruction to students which may be required at any hour throughout the year.
98	96	96	96	96	96	96	96	96	96	No third year Class in 1859-60, or fourth year Class in 1860-61.
120	120	120	120	120	120	120	120	120	120	

of instruction includes, not merely formal Lectures, but also examination in the business of the according to the nature of the subject.
addition, the Matriculation and Supplemental Examinations.

Sanskrit and Hindustani.

OUTSIDE EXAMINATIONS of Queen's College, Belfast, 1871.

Days.	Hours.	First Year Students.	Second Year Students.	Third Year Students.	Fourth Year Students.
Tuesday, Oct. 24.	9-12		Suppl. Ex. — { English, Math. Lang. Math.	Suppl. Ex. — Med. Lang., Math., Med. Phil., Chem.	Senior School — Latin.
	2-5		Suppl. Ex. — Greek, Latin.	Suppl. Ex. — Greek, Latin, Logic.	Senior School — Latin.
Wednesday, Oct. 25.	9-12		Senior School — Greek.		Senior School — Greek.
	2-5		Junior School — Greek.		Junior School — Greek.
Thursday, Oct. 26.	9-12		Med. Expts. } Junior — Chem.		Senior School — Chem.
	2-5	Maths. — Math.	Med. Expts. } Junior — Chem.		Senior School — Chem.
Friday, Oct. 27.	9-12	Maths. — Greek, Latin.			
	2-5				
Saturday, Oct. 28.	9-12	Maths. — English, in Arts only.			Senior School — Med., Math.
	2-5	Maths. — English, in Medicine, etc.			Senior School — Med., Math.

Monday, Oct. 23.	1-12	Latin of Unadvanced Students to be made out.	Math. School.—History. Senior School.—English.	English School.—Math. and Phys. Chem.	Senior School.—Nat. Hist. Junior School.—Nat. Hist.
Tuesday, Oct. 24.	1-12	Science Math English.	Science English	English School.—Math.	Junior School.—Math.
	1-8	Science Math English.	Science English Math. School.—Chem. and Phys.	English School.—Math. Math. School.—Chem. and Phys.	Junior School.—Math. Math. School.—Princ. of Chem.
Wednesday, Oct. 25.	1-12			Math. School.—Princ. Chem.	Junior School.—Math. Phil. Math. School.—Princ. of Math.
	1-8	Math Nat.	English School.—Phys. Chem.	English School.—Math. Phil.	Junior School.—Math. Phil.
Thursday, Oct. 26.	1-12	Math Nat.	English School.—Latin. English School.—Nat. Hist.	English School.— ϕ English. Math. School.—Math. Nat.	Math. School.—Math. Nat. Junior School.—Math. Nat.
	1-8	Math Nat.	English School.—Latin. English School.—Nat. Hist.	English School.— ϕ English.	Junior School.—Math. Nat. Math. School.—Phys. Chem.
Friday, Oct. 27.	1-12	Math Nat.	Math. School.—Math. Nat.		Junior School.—Math. Nat. Junior School.—English. Math. School.—Physiology
	1-8	Math Nat.	Math. School.—Math. Nat.		Junior School.—Math. Nat. Junior School.—English. Math. School.—Physiology

Students passing the Supplementary Examinations complete the previous year, and take each accordingly.

HOURS OF LECTURES,--SEMESTER 1871-72.

Days.	MATHS.			Other Lectures.			Miscellaneous.	
	1st Year.	2nd Year.	3rd Year.	1st Year.	2nd Year.	3rd Year.		
1871 10	French, Monday Wednesday Thursday Friday	Mathematics, Monday Tuesday Wednesday Thursday Friday		French, Monday Wednesday Thursday Friday	Mathematics, Monday Tuesday Wednesday Thursday Friday			
1871 11	Mathematics, Monday Tuesday Wednesday Thursday Friday	French, Monday Tuesday Wednesday Thursday Friday	Senior Class	Mathematics, Monday Tuesday Wednesday Thursday Friday				
1871 12	Latin, Monday Wednesday Friday	Art. Phys. Mon. Wed. Fri. Hist. Phys. Tues. Thurs.	Eng. Lit. Monday Wednesday Friday History Tuesday Thursday	Eng. Phys. Monday Wednesday Friday Geom. Tuesday Thursday	Mineralogy and Geology Monday Wednesday Friday Hist. Phys. Tuesday Thursday	General Phil. (Prof.) Tuesday Thursday	Eng. Phys. (for Science Students) Monday Wednesday Friday	Phys. Chem. (for Science Students) Tuesday Thursday
1871 1	Greek, Monday Thursday Friday	Latin, Monday Wednesday Friday	Mathematics, Monday Tuesday Thursday Friday History, Monday	Geom. Drawing, and Optic. Phys. Tuesday Thursday	Optic. and Heat (Prof.) Tuesday Thursday	Optic. and Heat (Prof.) Tuesday Thursday	Practical Demonstrations, Monday Tuesday Wednesday Thursday Friday	

[illegible]

RECEIVED: November 1, 1978; accepted: December 12, 1978.

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TABLET OF BALY—NOTES OF INTEREST

1st Year.			2nd Year.			3rd Year.			4th Year.			
English, 2 H.	Class Property, Monday, Wednesday, Friday	2 H.	English and Mathematics, Monday, Wednesday, Friday	2 H.	Class Latin, Monday, Wednesday, Friday	English and Mathematics, Tuesday, Thursday, Saturday	2 H.	English and Mathematics, Tuesday, Thursday, Saturday	2 H.	Classical Latin, Monday, Wednesday, Friday	2 H.	Classical Property, Monday, Wednesday, Friday

APPENDIX, No. 7.

Appendix,
No. 7.Digest
of Subjects
and
Courses.AN ENLARGED DIGEST OF SUBJECTS AND COURSES PURSUED IN
Queen's College, Belfast.

GREEK—Professor, Charles MacDonall, LL.D., M.B.A.S.

In the Greek Class, as in all those which are attended during more than one session, the business, as well as the hours assigned to the Students of the different years, is necessarily different; but it is always distributed into three simultaneous processes, viz., public examinations, lectures more or less formal, and exercises written at home and commented on in the class.

In the first session, the complex and self-contained structure of the Greek language is subjected to a close analysis; carried out, on the one hand, by tracing words to their crude forms, by classifying terminations, both the primary and the flexional, and by discriminating among analogically correct forms those actually used in different ages and dialects; on the other hand, by exhibiting the methods by which words are combined in simple clauses, clauses are knit into sentences, and sentences compose periods less or more complicated. Some prose-work furnishes the materials for this analysis; while the Students read and translate it, or else re-translate off-hand passages read out in English before them by the Professor. Besides syntactical phenomena, the laws and characteristics of both epic and dramatic versification are expounded and exemplified, while a portion of the *Iliad* and some tragedy are used as text-books.

In the second session, while consecutive passages of Herodotus along with some Attic oration or philosophical treatise, and a portion of the *Odyssey* along with some Attic tragedy or comedy, form the basis of prelections, the previous discipline is continued and extended; the distinctions of dialect and style are more fully elucidated; the origin, growth, and fortunes of the epic, the drama, history, and other departments of literature, are more distinctly unfolded; discussions on points of mythology, geography, chronology, archaeology, aesthetics, &c., are more freely introduced and more amply treated. The Students are invited to turn Herodotean Greek, at sight, into Attic, altering both the forms of words and the structure of sentences; to re-translate passages into Greek prose and verse; and also to give in original essays in both forms of composition.

In a distinct or higher class, advanced Students, generally in the third or fourth year of their Course, are exercised in the study of more difficult works than those previously read, in the higher problems of criticism and philology, and especially in composing both prose and verse.

The following Text-books have been used in the successive Sessions of College from 1849-50 to 1872-3:—*The Iliad*, all the Books except I., II.; the *Odyssey*, Books I. to XX. (inclusive); Herodotus, *Theogonia*; Pindarus, *Olympia*, *Pythia*, *Nemei*; Aeschylus, all the Tragedies except the *Suppliants*; Sophocles, the seven Tragedies; Euripides, all the Plays except the *Cyclops*; Aristophanes, *Nubes*, *Aves*, *Ranæ*; Herodotus, Portions of Books I., II., III., IV., VII., VIII., IX.; Thucydides, Books I., II., VI., VII.; Xenophon, Portions of *Anabasis*, *Memorabilia* *Socratis*, *Cyropaedia*; Platon, *Apologia Socratis*, *Gorgias*, *Phaedon*, *Phaedrus*, *Philebus*, *Protagoras*, *Theætetus*, *Timæus*, *Menon*, and Books I., II., VII., and X. of *Respublica*; Aristoteles, *Postica* and portions of *Rhetorica*; Demosthenes, c. *Meidiam* and *de Corona*; Aeschines, in *Ctesiphontem*.

The SANSKRIT and HINDUSTANI CLASSES, conducted during six Sessions by the Professor of Greek, have been discontinued.

LATIN—Professor, William Nesbitt, M.A.

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of Subjects
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The Professor of Latin gives three lectures weekly to Students of the First, and the same number to Students of the Second Year, attendance upon which is compulsory for all that take the Latin Classes. Besides these compulsory lectures, he gives two lectures additional to Students of each of these years, attendance on which is voluntary, in which more difficult authors are read, and special attention is paid to composition. The attendance on these lectures is very good. That on the general classes reaches, in the first two terms, a daily average of perhaps 90 per cent. of those enrolled: the voluntary classes are, this year, attended by about two-fifths of the Students of the First, and one-third of the Students of the Second Year.

An honor Class has been formed of Students of the Third and Fourth Years, chiefly attended by those who are anxious to distinguish themselves in Ancient Classics at the Degree Examination.

The Professor lectures thirteen hours each week throughout the Session, extending, with short intervals at Christmas and Easter, from the beginning of November to the beginning of June.

The proficiency of the Students depends, of course, to a considerable extent, upon their preparation at entrance. It has been the aim of the Professor, without fixing any fancy standard, to make the matriculation examination as strict as is consistent with the state of intermediate education in the province. Several important schools, he is happy to say, have been called into existence by the influence of the Queen's College, and many more have been largely benefited, as well by its reflex action as by the large number of efficient teachers that it has supplied. Still this department of our educational system remains in a very unsatisfactory condition, and its organization—a work far beyond the reach of private enterprise—is confessedly the great desideratum of educational reform. At present, the practical requirement of this College in the Latin language from candidates for matriculation is that they should be able to read aloud a portion of a Latin author, in such a way as to retain the attention of the class; and this requirement is fairly met. Members of the class must, at each lecture, when called upon by the Professor—and all are called upon without any fixed order—translate into English a portion of the book which forms the subject of the term, and render into Latin an easy exercise.

In this way pass Students of the first year are expected, during the session, to get through some such course as this:—A book of Livy, the Catilinarian Orations, and, if possible, one of the shorter philosophical treatises of Cicero; while those that attend the voluntary class read, in addition, say, two books of the Georgics of Virgil, together with selections from Terence and Juvenal; and no Students are allowed to rise to the Second Year who fail to pass a satisfactory examination in at least the subjects of the pass course.

In the Second Year, pass men read with great care, under the same conditions as are observed in the First Year, some such course as this:—Three books of Cicero's Letters, and as many of Horace's Satires as can be got through, continuing their efforts to attain, if not elegance, at least grammatical correctness in writing easy Latin; while the members of the Voluntary Class are expected, in addition, say, to complete the Georgics of Virgil, and to read a part of the Epistles of Horace, with selections from the Annals of Tacitus.

At the end of the Second Year pass men have completed their Latin studies, and having passed the first examination in Arts at the University, are set free to pursue for their degree studies for which they have more special aptitude.

The Third Year's Latin Class is therefore strictly an Honor Class, and its members read as many of the authors prescribed for classical honors at the University as can be brought within the limits of the Session. Last year the books read were the Pro Cluentio of Cicero, with selections from the Histories of Tacitus, from Plautus, and from Lucretius.

During the whole Session, passages such as are set at Honor Examinations, are rendered into Latin by the members of the Voluntary and Honor Classes, and their versions are carefully corrected by the Professor at home, and made the subject of comment in the class. Latin philology is studied with the aid of the excellent text books of Roby and Peile.

* I take as an example the actual course of the present year.

The Professor has made his *résumé* by the desire of the President, who thinks it due to the Legislature and the public that, at a time when so much laxity of statement is indulged in, an authentic account of the work of the College should be furnished by those to whose hands its teaching has been committed. If the Professor may be permitted to state his impression as to the results of that teaching, he would say that the attainments of the pass men—as might be expected from their punctual attendance upon lectures, and their very commendable diligence—are higher than those of the corresponding class in the University with which he is most intimately acquainted—the University of Dublin; while the attainments of honor men, who usually start from a much lower level, fall considerably short of those of the best men in that University. They may be represented by high distinction at such examinations as that for the Civil Service of India.

HISTORY AND ENGLISH LITERATURE—*Professor, Charles Duke Yonge,*
A.B. OXON.

Class of the English Language.

The business of this Class is conducted by—

A Course of Lectures on the Origin, Formation, Inflections, and Grammar of the English Language, for which Dr. Latham's "English Language" forms in some degree the text-book;

With occasional Lectures on the rules and principles of Prose Composition, and Weekly Essays.

Class of English Literature.

The business of this Class is conducted by—

A Course of Lectures on English Literature in general, and particularly on the lives, works, and styles of the best authors in each department;

With Special Lectures also on the works appointed as the subjects for the Dublin Autumnal Examination of the ensuing year, with and without Honors;

And Fortnightly Essays.

Class of History.

The business of this class is conducted by—

Lectures on History in general;

Lectures on English History, embracing rather the larger half of the entire course;

A subsequent course on the History or that portion of the History of any other country which is selected as a subject for the Dublin Autumnal Examination of the ensuing year.

MODERN LANGUAGES—*Professor, Albert Ludwig Meissner, PH.D.*

The instruction in Modern Continental Languages embraces three courses each for French and German, extending over three terms, and a course of Italian during the first two terms, attendance on which is voluntary.

No entrance examination is as yet held in Modern Languages, in consequence of which the insufficiency of intermediate teaching is more apparent in this department than perhaps in any other. The consequence of this is, that the Professor is over-burdened with a great amount of elementary teaching, without which his classes cannot be kept in good working order. The number of lectures delivered during the past session was no less than 406. Something, it is hoped, may be done to relieve the Professor of some part of the elementary teaching, so as to increase his usefulness in the more advanced classes.

Students in Arts and Medicine, and in the department of Engineering, are required to attend lectures on one Modern Language for one session. The majority select for this purpose the French language; several, however, attend both French and German. For Students in Arts of the second and higher years, Modern Languages form one in a group of four subjects, out of which they select two.

The work of the classes, especially during the first two terms, is carried on to a great extent by means of *visd roce* questions and answers. Frequent oral

examinations are held, and at each meeting of the classes a passage is translated from English into French or German. Appendix, No. 7.

In the First Session the Grammar and the principles of composition are explained, and select passages are translated from French and German Classics. Digest of Subjects and Courses.

In the Second Session a systematic course of composition is gone through, and the Students are made acquainted with the principal authors of French and German Literature.

In the Third Session a course on the elements of Comparative Grammar is delivered, which is followed by a course on some period of Continental Literary History. The students write essays in Modern Languages, which are read and discussed in the class.

Medical Students unable to attend the classes in Arts, are instructed in a separate class.

About six per cent. of the Students attending Lectures on Modern Languages are Non-Matriculated.

MATHEMATICS—*Professor, John Purser, M.A.*

Attendance on this Class is prescribed to all Students in the Faculty of Arts during the first year of their Course; during the second year Mathematics forms one of four Courses, out of which the Students select two.

All Students in the Department of Engineering are required to attend the Mathematical Classes during two years.

Before entering, Students are required to pass an examination in the First and Second Books of Euclid, and in a small portion of Algebra. Practically they come fairly prepared in the prescribed portions of Euclid, but a large proportion can hardly be said to possess even an elementary knowledge of Algebra. A considerable number of the Students are Candidates for Mathematical Scholarships at entrance, and these are generally well prepared in the first six Books of Euclid, and a considerable portion of Algebra and Plane Trigonometry.

On this account the instruction of the First Year in Mathematics has been given in two Divisions. The Lower Division is carefully taken through such portions of Euclid I., II., III., IV., VI., as they have not previously prepared, and is instructed in Algebra as far as the progressions, and in Plane Trigonometry as far as the solution of triangles, with the use of logarithms and trigonometrical tables. In the Upper Division a more advanced course of lectures is given in Geometry, Plane Trigonometry, and Algebra, to which is added either the Conic Sections, treated geometrically, or Spherical Trigonometry.

The Council has sanctioned the employment of the Senior Mathematical Scholar in giving a portion of the instruction of the Lower Division. This arrangement, while it affords a greater number of hours to the Lower Division, enables the Professor of Mathematics to give more attention to the Upper Division, and has been found to work very satisfactorily.

In the Second Year the subjects of Lectures are Analytical Geometry, the Differential and Integral Calculus, and the first three sections of the Principia of Newton.

In the Third Year an Honor Course is given, in which are taught the higher branches of the Calculus, Geometry of Three Dimensions, and Differential Equations.

NATURAL PHILOSOPHY—*Professor, Joseph David Everett, M.A., D.C.L.*

The Classes in this Department are arranged under the three heads of Experimental Physics, Mathematical Physics, and Natural Philosophy Applied.

All Students in the Faculty of Arts in their Second Year attend the Classes of Experimental and Mathematical Physics. Engineering Students attend the Class of Experimental Physics in their First Year, the Class of Mathematical Physics in their Second Year, and the Class of Natural Philosophy Applied in their Third year. Medical Students attend the Class of Experimental Physics only.

In all these Classes the teaching is by prelection interspersed with oral examination.

The subjects treated under the head of Experimental Physics include—Properties of Matter, Mechanical Powers, the Elements of Hydrostatics and Hydraulics, Heat, Light, Sound, Electricity, and Magnetism; the leading principles in these several departments being broadly laid down and copiously illustrated by experiments.

The Course of Mathematical Physics includes a rigorous demonstration of the principal theorems in Statics and Kinetics, an explanation of the leading principles of Astronomy, Geometrical Optics, and the Mathematical treatment of numerous questions connected with the subjects of the Experimental course.

In the Class of Natural Philosophy Applied, the subjects include a more advanced course of Statics, Kinetics, and Hydrostatics, involving application of the Differential and Integral Calculus, and illustrated by practical examples, Kinematics, including the principles of Mechanism, the relations of Stresses and Strains, Moduli of Elasticity and Rigidity, Work Done, Kinetic and Potential Energy, Elements of Thermodynamics.

In addition to the above-named Classes, there is an Honor Class, attended by Senior Students, in which the subjects prescribed for University Honors are studied.

CHEMISTRY—*Professor, Thomas Andrews, M.D., F.R.S., M.E.I.A.*

In the Class of Chemistry the greater part of the Course is devoted to pure Chemistry; but the Elements of the Sciences of Heat and Electricity, particularly in their relations with Chemistry Proper, are also taught. The application of these sciences to the arts are particularly referred to; and it has been the constant endeavour of the Professor to communicate to the Students as precise and accurate information as possible on the subjects treated in his Lectures, and to train them to habits of careful observation and accurate thinking. With this view a weekly examination of the whole Class is held, at which the Students are subjected to a searching examination on the business of the preceding week; and further to encourage a taste for scientific inquiry, and also to train a certain number of practical chemists, a limited number of the Students are admitted, by examination, as working pupils into the chemical laboratory, where they have an opportunity of acquiring a knowledge of chemical analysis. This latter arrangement has now been in practice for several years, and has been attended with the best results.

NATURAL HISTORY—*Professor, Robert O. Cunningham, M.D., F.L.S.*

The Zoological Department of the Course occupies the First Term and greater part of the Second, and comprehends the Outlines of Anatomy and Physiology of animals, followed by Systematic Zoology, and remarks on the distribution of animals.

The Botanical part comprehends Vegetable Anatomy and Physiology, Systematic Botany, and distribution of vegetable forms. In addition to the Class Lectures, meetings are held in the Botanic Garden, and practical excursions made into the neighbouring country.

This Course comprehends chiefly Lectures on the structure and form of continents and islands; the distribution of mountain systems, rivers, and lakes; the ocean, its currents, temperature, &c.; the atmosphere, its currents, &c.; rain, snow, &c. The preceding subjects are considered in relation to the geographical distribution of animals and plants.

These different branches are illustrated by specimens, or drawings, or both, as the case may be.

GEOLOGY AND MINERALOGY—*Professor, Robert O. Cunningham, M.D., F.L.S.*

The Courses consist of lectures, demonstrations, and examinations. The Geological Course embraces the general principles of the science, and a detailed investigation of the palaeontological, lithological, and economic characters of all the formations. The Students are exercised in the practical use of the necessary instruments, and in the construction of Geological maps and working sections. The characteristic fossils of the different formations are rendered familiar by the exhibition of specimens and models, and an excellent series of drawings. Drawings are also used for the illustration of the underground workings of mines of copper, coal, &c.

In the Mineralogical Course the Students are instructed in the most modern crystallography by models, and exercised with the reflecting goniometer. The electro-chemical classification of minerals is then explained, and an extensive suite of minerals in the Museum is arranged on that system, for the instruction of the Students.

Once a week examinations are held, and additional explanations given of the subjects of the preceding lectures.

LOGIC AND METAPHYSICS—*Professor, John Park, M.A.*

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LOGIC.

This class meets at 2 P.M., on Tuesdays, Wednesdays, Thursdays, and Fridays, during the First, and part of the Second Terms of the Session. Digest of Subjects and Courses.

The business of the class is conducted by lectures on Logic, or the science of the conditions on which depend valid inferences and the correct expression of evidence, containing under it Formal Logic (the theory of symbolical proof), and Material Logic; by examinations on the lectures and on Fowler's "Elements of Deductive Logic," and "Elements of Inductive Logic," and by the criticism of Essays on Logical subjects, of which four are required from each Student.

Students should read Morell's "Handbook of Logic," and Bacon's "Novum Organum," Book I., before entering the class.

METAPHYSICS.

This class meets at noon, on Tuesdays, Wednesdays, Thursdays, and Fridays, during the First and Second Terms of the Session.

The business of this class is conducted by lectures on Psychology, or the science which investigates the phenomena of the human mind and their conditions; and Metaphysics Proper, or the science which investigates the Nature of Truth and of Existence; by examinations on the lectures, on Mansel's "Metaphysics," and on Dr. Stirling's Translation of Schwegler's "Handbook of the History of Philosophy"; and by the criticism of Essays on Metaphysical subjects.

HIGHER LOGIC.

This class meets three times a week during the First and Second Terms of the Session, and is conducted by lectures, and a course of reading and examinations. Especial attention is paid to the subjects contained in the Degree Honor Courses of the ensuing year.

CIVIL ENGINEERING—*Professor, James Thomson, M.A., C.E.*

The Courses of lectures and practical instruction given by the Professor of Civil Engineering are arranged to accord with the Ordinances of the Queen's University, which prescribe to candidates for the Diploma in Civil Engineering a Curriculum extending over three Sessions usually, but admitting of abbreviation to two Sessions in the case of students whose previous acquaintance with a sufficient group of the subjects prescribed for study in the first and second Sessions of the ordinary Course shall be deemed by the College Council satisfactory.

For the First Year Students the Professor gives a course of instruction, comprising lectures and oral examinations on the Principles of Geometrical Drawing, and the performance by the students of practical work under his direction. The lectures include the principles of descriptive geometry, orthographic and isometric projection, and linear perspective; and the practical work comprises the performance of examples in these subjects, and the execution of drawings in Mechanical Engineering, and occasionally also in Architecture and Civil Engineering. The Class meets for two hours at a time on two days per week during the three Terms of the College Session.

For the Second Year Students two courses are conducted by the Professor of Engineering, of which one is a Lecture Course and the other a Practice Course. The Lecture Course comprises surveying, levelling, and plotting, with the theory and use of the instruments required in surveying and levelling operations; mensuration of earthworks for railways; setting out works on the ground, including ranging of railway curves, and setting out breadths of cuttings and embankments, and ranging tunnels, &c. The Course also comprises usually some of the following subjects:—revision and further prosecution of descriptive geometry, and perspective, and other subjects of geometrical drawing; designing and drawing of oblique bridges; properties and qualities of materials used in construction, and modes of procuring them; and an introduction to architecture as a fine art.

In the Practice Course of the Second Year the Students are engaged in the performance of office and field work, under the instruction and direction of the

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Professor; and the business includes surveying, levelling, drawing, mapping, and the computation of areas of lands, and other engineering calculations. Excursions are also made occasionally during the Session to visit Engineering works. For the Third Year Students there are (as for those of the Second Year), two Courses conducted by the Professor, one a Lecture Course, and the other a Practice Course. The Lecture Course comprises the farther treatment of some of the subjects proposed to be entered on in the Second Year, and most of the following subjects:—foundations, cofferdams, bridges, tunnels, roads, and railways; specifications for engineering contracts; water-works for supplying towns; science of the flow of water in orifices, pipes, and canals; drainage of fens by gravitation, and by steam power and other mechanical means; regulation and improvement of rivers; science of the strength of materials and structures; ventilation of dwelling-houses, public buildings, and mines; processes and mechanisms used in foundries and engineering workshops.

The Practice Course includes office work, field work, and engineering excursions.

ANATOMY AND PHYSIOLOGY—*Professor, Peter Redfern, M.D. Lond., F.R.C.S.*

The Department of Anatomy and Physiology comprises two distinct Courses of Lectures—one on Anatomy and Physiology, the other on Descriptive and Surgical Anatomy, and also the teaching of Anatomy by Dissections throughout the day.

The Course of Anatomy and Physiology includes about 144 meetings, each of an hour's duration, held on the first five days of each week from November to April inclusive. These meetings are for lecture and occasional examinations on the subjects previously considered in the lectures. The lectures include a complete course of the Anatomy and Physiology of the general textures of the body, including the blood, chyle, &c., and a systematic account of the whole of the viscera, treated of as they are associated in groups for the several purposes of digestion, circulation, respiration, urination, innervation, and generation; also the organs of sense. In treating of every part or organ its healthy state is shown by recent dissections and by preparations from the Museum illustrating it in man and animals, its diseased states and actions being referred to at the same time and contrasted with the healthy ones. The textures not visible to the naked eye are shown under a series of achromatic microscopes, so that during the Course every student in the class has an opportunity of judging for himself of the true characters of each part, and, by becoming familiarized with these, of recognising each when changed by disease.

The Course of Practical Anatomy and Anatomical Demonstrations includes:—
1st. Dissections carried on throughout the day under the immediate superintendence of the Professor of Anatomy and Physiology, and the Demonstrator. Each Student is required to be steadily engaged in dissections during the whole Session. For this purpose the supply of subjects is regular and abundant, and thus affords the surest foundation for efficient medical teaching.

2nd. This Course includes the Anatomical Demonstrations, which consist of a complete Course of Descriptive and Surgical Anatomy, commencing with the anatomy of the skeleton and bones, and including the anatomy of the limbs and other parts, excluding that of the viscera and the physiology treated of in the Course of Anatomy and Physiology. The demonstrations are given on each of the first five days of the week, and are about 117 in number in each Session.

PRACTICE OF MEDICINE—*Professor, James Cuming, M.D.*

The class meets four times each week, from the first week of November to the last of the following April.

An examination is held usually once a fortnight. The Course embraces the principles of Inflammation, Fevers, the diseases, organic and functional, of the viscera of the three great cavities of the human body. In treating of individual diseases, their pathology, semeiology, etiology, and treatment, are the subjects chiefly dwelt on. Wherever it is possible, pathology is illustrated by the preparations afforded by our Museum, by drawings and plates, or by recent specimens. It may be added that the Professor's present connexion with the Belfast General Hospital adds greatly to the means of making his Course more useful and interesting to students.

THEORY AND PRACTICE OF SURGERY—*Professor, Alexander Gordon, M.D.* *Appendix, No. 7.*

Four Lectures are delivered weekly during the Medical Session. An examination is held each day on the subject of the preceding day's Lecture. Each Course comprises the following subjects:—

Inflammation,	Diseases of the Burne,
Suppuration,	“ Bone, benign and malignant,
Morification,	“ the Jaws and Mouth,
Erysipelas,	“ the Fingers and Toes,
Burns,	“ Female Breast,
Ulcers,	“ Anus and Rectum,
Wounds,	“ Testis,
Hæmorrhage,	“ Hernia,
Diseases of the Arteries,	“ Prostate,
“ Veins,	“ Bladder,
Fractures of Trunk and Extremities,	“ Eyes,
“ Cranium, Injuries of the	“ Larynx,
“ Brain and Scalp,	Syphilis,
Dislocations,	Gonorrhoea,
Diseases of the Joints,	Stricture.

All the capital and minor operations are performed on the dead subject. The Professor delivers a separate Course of twenty-five Lectures on Operative Surgery.

MATERIA MEDICA—*Professor, James Seaton Reid, M.D.*

This Course includes—

- 1st. General Pharmacology, or the modes in which medicines act upon the living organism in a state of health.
- 2nd. Therapeutics, or the modes in which medicines act as curative agents.
- 3rd. Pharmacy.
- 4th. Dietetics, a review of the different kinds of food used in health and in disease.
- 5th. Special Pharmacology, or the history, composition, uses, and modes of administering medicinal agents for the cure of disease.

The Class meets four times each week. An examination is held once every week.

MIDWIFERY—*Professor, Robert F. Dill, M.D.*

Lectures four times a week during the six winter months consist of following subjects:—

- Anatomy of the pelvis, so much as is required for midwifery. Its measurement and pelvimeters.
- Contents of the pelvis. The functions of the uterus in its virgin state.
- Conception—length of gestation—changes of the uterus and its appendages during gestation.
- Growth of child from its earliest seen form until its full parasitic size.
- Graafian vesicle and corpus luteum. Fœtus, its circulation, signs of maturity, weight, and length.
- Plural births.
- Proportion of births and deaths of males to females.
- Superfetation.
- Signs of pregnancy.
- Signs of approaching labour.
- Natural labour, its progress; also the positions and progress of child till its separation from its mother.
- Management of natural labour, including the arrangement of the bed and bed-room, and the proper dress and posture of the patient.
- Tedious labour, its causes and treatment.
- Labour requiring the use of instruments; their application taught on models in the class.
- Cæsarean section and Sigaultean operation—how to prevent the fœtus from getting large in uterus.

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- Premature labour—how to bring it on, and when it is necessary to do so.
 Cross-births and their treatment.
 Abortion—how to prevent it.
 Extra uterine gestations—how they occur, and their treatment.
 Management of women after delivery, and treatment of such accidents and diseases as occur at this period.
 Management of children after birth, washing, dressing, food, &c., and the choice of a wet-nurse, and treatment of such accidents as take place at this period, or soon after.
 Practical midwifery taught by pupils attending patients in their own houses and in the Lying-in hospital, where Clinical Lectures are given.

MEDICAL JURISPRUDENCE—*Professor, Dr. Hodges.*

The Lectures in this Course are delivered twice weekly during six months. They include an account of the history and chemical investigation of poisons, and of the various subjects respecting which the evidence and assistance of Medical Practitioners may be required in Courts of Law. Experimental illustrations of the methods to be pursued in medico-legal inquiries are given, and frequent examinations held to test the progress of Students. No salary has been allocated to the Teacher of this department, and the duties, at the request of the Council, have, since the opening of the College, been performed by Dr. Hodges.

ENGLISH LAW—*Professor, Echlin Molynaux, q.c.*

The Course of the *First* year in this department comprehends the elements of real and personal property, with the principles of conveyancing; that of the *Second* consists of an introduction to the principles and practice of Courts of Equity and the law of Bankruptcy; the *Third* Course includes the common law as incident to contracts, the nature and form of remedies by civil action, and an outline of criminal law, theoretical and administrative, which last completes the Curriculum of instruction required for the attainment of the Diploma of Elementary Law in the Queen's University. The subjects prescribed for Students of the *Fourth* year to qualify them for the Degree of LL.B. embrace a more extended and detailed course of the subjects already enumerated, including the law of wills, powers, evidence, and procedure.

JURISPRUDENCE AND POLITICAL ECONOMY—*Professor, T. E. Cliffe Leslie, LL.D.*

The subjects embraced in the Course of Lectures on *Jurisprudence* are according to the regulations of this College, (1) the Elements of Jurisprudence, (2) Civil Law, (3) Constitutional Law, (4) Colonial and International Law.

In the treatment of these subjects both the *Historical* and *Philosophical* Methods are followed in the Lectures of the Professor. The Historical Method, for example, is applied in tracing the principal changes through which the laws of England have passed, the assignable causes of such changes, and the degree and manner in which, in comparison with the laws of Continental Europe, the laws of this kingdom have been affected by contact with the principles of Roman legislation. The method of Philosophical Analysis, on the other hand, is applied in investigating the doctrines of the foundation and classification of rights, the several parts and legitimate form of a complete code, the relation of Scientific Jurisprudence to other departments of Social Philosophy, and the means of improving the state of Positive Law as deducible from such considerations.

The subjects which a Course of Lectures on *Political Economy* must embrace are fewer and more definite than those classed under the less advanced and more complicated Science of Jurisprudence. It is the Professor's endeavour to illustrate the principles of Economic Science by the help of those practical applications which will be most interesting and useful in a large commercial town.

APPENDIX No. 8.

Appendix,
No. 8.

GENERAL CLASS EXAMINATION AT THE END OF THE
SESSION, 1871-72.

General
Class Ex-
amination.

FIRST YEAR STUDENTS.

HISTORY AND ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

SUBJECT FOR ESSAY.

THE USEFULNESS OR MISCHIEFS OF AMBITION.

[The argument on either side may be supported by some well-known instance or instances drawn from History.]

1. From what other language or languages is the English language derived? What circumstances gave these other languages a footing in the country?
2. The question has been raised how far English nouns and verbs can be said to be inflected. Give a brief analysis of the arguments brought forward to determine it.
3. Explain the principles which ought to govern our use of *shall* and *will*.
4. Does the English language supply instances of any part of a verb being used as a noun substantive? Support the usage referred to by the practice of other languages.
5. What rules are laid down by Dr. Latham respecting "composition"?
6. Dr. Latham, following Hallam, affirms, that about three-quarters of a century after Chaucer's time, the English language underwent a great change. How does he describe that change? And what important event, occurring about that time, was calculated to have a powerful influence on English, and every other language of modern Europe.
7. What is the distinction between *strong* and *weak* verbs?
8. In derived words, different terminations often indicate particular ideas or qualifications. Give different instances of this fact.

Correct any inaccuracies or inelegancies which you may remark in the following passage :—

Such was the memorable battle of Wagram; one of the greater and most obstinately contested in the whole Austrian annals. The loss on both sides were immense. 25,000 brave men on each side were killed and wounded, without no decisive result been obtained. The other trophies were nearly equalled. The Austrian right wing have made 5000 prisoners; and 2000 of their own wounded had fell into the hands of the enemy.

Appendix,
No. 6.
—
General
Class Ex-
amination

1. Give instances of Shakespeare's close adherence to classical authorities in his play of Julius Caesar.
2. What idea do we derive from the play, of the characters of Caesar, Antony, and Brutus?
3. "Here wast thou *bayed* brave hart;
Here didst thou fall; and here thy hunters stand,
Signed in thy spoil, and crimsoned in thy lethe."
"Caesar, I never stood on *ceremonies.*"
Explain these passages, and especially the words in italics.
4. Point out how Milton distinguishes the characters of the different fallen angels, especially Satan, Belial, and Beelzebub.
5. Mention some passage or passages in which he has imitated Virgil, and comment on the taste of the imitation.
6. What is the plan of the first book of the Essay on Man?
7. Quote any passage from the Essay on Man, 6 or 8 lines; and write one or two notes on it.
8. Who does Macaulay mean by "the French kings of England?" How many does he enumerate, and what does he say of them, and especially of the last?
9. What difference does Macaulay point out between the policy adopted by England in the Middle Ages, and that adopted by the other countries of Christendom, and what were the chief consequences of the difference?
10. What account does he give of the state of literature, science, and the fine arts in England in the latter part of the 17th century?

SECOND YEAR STUDENTS.

LOGIC.—*Examiner, Professor Park.*

1. Explain and criticize the following definitions of logic:—
(a.) The science of the laws of thought as thought;
(b.) The science and art of reasoning;
(c.) The art of thinking.
2. Explain the following terms:—*form, law, truth, partition, kind, pluralive, disjunctive.*
3. Give a brief but clear account of the general term. Are all terms either singular or common?
4. By what processes are terms rendered clear and distinct? Whence are "the so-called logical laws" of these processes derived?
5. Give a short account of the nature of propositions in formal logic. Divide these on as many principles as you remember.
6. Show by examples of modals that we may "regard the form 'A is or is not B' as the ultimate and uniform logical analysis of all propositions."
7. State the names and the laws of the following inferences:—
(a.) $A=B \therefore B=A$.
(b.) E is true, \therefore I is false, A false, O true.
(c.) All the righteous are happy \therefore all who are unhappy are unrighteous.
(d.) All the insincere are dishonest \therefore no insincere person is honest.
8. Prove that two particular premisses warrant no conclusion, and that if one premiss be particular the conclusion must be particular.

9. What formal errors occur most frequently in simple syllogisms? Appendix,
No. 2.
Examine the following arguments:—

- (a.) Some M is not P; all S is M. ∴ no S is P.
- (b.) Most M is P; most M is S. ∴ most S is P.
- (c.) All P is M; all M is all S. ∴ all S is P.

General
Class Ex-
amination.

10. Construct and reduce Baroko, Dimaris, a sorites of six propositions, and a destructive conjunctive syllogism.

11. What conclusions are inferrible from the premisses:—

- (a.) $\frac{2}{3}$ A is B, $\frac{1}{2}$ A is C;
- (b.) $\frac{9}{10}$ A is B, $\frac{9}{10}$ B is C;
- (c.) "Nine out of ten Swedes have light hair, and eight out of nine inhabitants of Stockholm are Swedes."
- (d.) The probabilities in favour of certain probable arguments are represented respectively by $\frac{1}{3}$, $\frac{2}{3}$, $\frac{2}{3}$, and these arguments are; (1) "a self-corroborative chain of evidence;" (2) "a self-infirmative chain."

12. According to what principles should we arrange the divisions of material logic? What is its leading problem, and why?

13. Explain the nature of the Double Method of Agreement. What is the characteristic imperfection of the Method of Agreement?

14. Define and illustrate analogical reasoning.

15. Give Mr. Fowler's classification of fallacies, and exemplify *Ignoratio Elenchis*, undue assumption, and fallacy of composition.

Enumerate the most frequent fallacies in

- (a.) Immediate inferences;
- (b.) Material inferences.

GEOLOGY AND PHYSICAL GEOGRAPHY.—*Examiner, Dr. Cunningham.*

1. Mention the names of the principal varieties of oxide of silica.
2. What are the principal ores of iron, and where do they occur?
3. State the structure and composition of granite, greenstone, porphyry, amygdaloid, and obsidian.
4. Give a short account of the triassic strata, and their more characteristic organic remains. Mention what you know regarding their distribution in the British Islands.
5. Give an account of the more remarkable plants of the Carboniferous period.
6. State what you know regarding the structure of Labyrinthodont Amphibia, and mention in what strata we first meet with their remains.
7. Mention the principal divisions of the Cretaceous strata, and give the names of the fossils characteristic of the various groups.
8. Give a brief account of the structure, movements, and distribution of glaciers.
9. Give a sketch of the geographical distribution of the principal families of artio-dactyle Ungulata.

ZOOLOGY.—*Examiner, Dr. Cunningham.*

1. Mention the principal characters by which Actinocœla are distinguished from Hydrocœla.
2. Give an outline of the classification of Crustacea.

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General
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amination.

3. Contrast the characters of the shell and soft parts in the Brachipoda and Lamellibranchiata.

4. Give an account of the different forms of shell which occur in Cephalopoda.

5. Enumerate the osseous elements of the mandibular and hyoid arches in an osseous fish.

6. Give the names and characters of the sub-orders of Ophidia.

7. State what you know with regard to the structure, habits, and distribution of the Struthionces, mentioning the names of the principal existing and extinct genera.

8. State the character of the dentition in a toothed Cetacean, in Ornithorhynchus, in the Ox, Camel, Elephant, Rabbit, Lion, and Chimpanzee."

9. Mention the distribution of the families of Edentata.

THIRD YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

COMMON AND CRIMINAL LAW.

Pass Examination.

1. In an action by indorsee against drawer, what is the legal effect of want of notice of dishonour of the bill?

2. In what respect does the Statute of Frauds affect contracts for the sale of lands?

3. In equity suits between partners, what is the essential relief to be prayed by the bill?

4. What is the function of the "Grand Jury," as attached to a Court of Criminal Jurisdiction?

5. What is the essential element in a simple contract?

6. In what does the distinction exist between an action of trespass and an action on the case?

7. Into what two classes are pleas in bar divided?

8. What is the nature of a challenge to the array? And what of a challenge to the poll?

9. If the plaintiff's declaration pleads does not set forth a statement sufficient to entitle him to recover in the action, by what course can that question be raised?

Honor Examination.

1. What latitude, as to parties defendants, is permissible, when the persons are numerous, and the contract is joint and several?

2. A. conveys to B. and his heirs, to the use of B. and his heirs, to the use of C. and his heirs. B. has obtained and holds possession against C. What is the nature of the remedy to which C. must resort to recover the lands, and what the terms in which he seeks such redress? And what course must C. pursue if the possession is withheld by a stranger?

3. What are the several stages of a criminal prosecution and trial?

4. In what respect do statutable joint-stock companies differ from common-law partnerships, in their constitution, legal rights, liabilities, and procedure in action?

5. What is the difference between the remedies upon contracts for the sale of lands, as administered at law and in equity? State the details.

6. Why is an agreement to accept a less sum from the debtor than what is due, a bad defence by way of accord and satisfaction?
7. What is the difference between an action of trover and an action of detinue as to the judgment of the court?
8. What are the peculiar characteristics of the statutable action for recovery of damages for the death of a person, caused by the negligence of the defendants? State what maxim of the common law is infringed by the statute.
9. Upon what classes of objection has a judge, presiding in a criminal court, power to deny to the party objecting an opportunity of having his judgment revised, which can be insisted on in a trial of a civil action?
10. An agent buys without disclosing the fact of his agency, and without paying the price of his purchase. What is the full extent of the vendee's rights upon the contract?
11. What is the extent, and what are the limits, of the Court of Queen's Bench as to initiating criminal proceedings?
12. State the nature of a guarantee, and the circumstances in detail, which go to constitute a legal guarantee, independent of the Statute of Frauds?
13. Goods ordered by parcel through a commercial traveller, to the value of £500. The goods, as ordered, are consigned to the vendee, through an ordinary trading vessel. The vendee, without inspecting the goods, rejects them. Has the vendor any, and if so what, remedy?
14. In what cases of defamation is it necessary for the plaintiff to plead and prove special damage?
15. In what respect is the office of a Justice of the Peace judicial, and what are his ordinary administrative functions?
16. When does the right of action of the landlord first accrue in the case of a tenant at will, so as to calculate the time after which the Statute of Limitations operates as a bar?
17. When does the Statute of Limitations begin to run in favour of a tenant from year to year against his landlord?

LAW OF PROPERTY AND CONVEYANCING.

Pass Examination.

1. What would be the operation of a conveyance "to A. B. for ever," in a deed, and in a will, respectively?
2. To what interests, present and prospective, is a husband entitled, in an estate of inheritance, which has descended upon his wife?
3. When a person dies, seized of an estate in fee simple, leaving his sole issue the son of his eldest child deceased, *being a daughter*, and a daughter of a deceased younger child, *being a son*; who takes the estate? If the property were *personally*, upon whom would it devolve, on the same state of facts?
4. Bequest of personal estate to A. B. and his issue; what interest does A. B. take?
5. What has been always the proper form of conveyance to pass incorporeal hereditaments; as, for instance, rent charge?
6. Estate in fee simple conveyed in mortgage to secure £1,000. The mortgagor dies intestate, leaving C. D. his *heir at-law*, and E. F. his *personal representative*; who succeeds to the legal estate in the lands, and who to the mortgage debt?
7. What word in a deed is necessary to constitute an estate of inheritance in lands?
8. What is the difference between a remainder and a reversion?

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Class Ex-
amination.

9. What are the functions respectively of deeds of *surrender* and of *release*, in their operation upon interests in land?
10. What was the policy of the Acts establishing a Registry of Deeds in Ireland?

Honor Examination.

1. A. B. dies intestate, possessed of personalty, leaving his only kindred, A. B. and C. D., two daughters of a paternal granduncle, E. F., a maternal aunt, and G. H., the grandchild of another aunt; who will be entitled to the property?
2. What are the covenants in reference to title to which a purchaser is entitled, in a conveyance upon the sale of real estate?
3. Give any state of circumstances which would require an investigation of the title, even beyond 60 years.
4. What are the contingencies to which purchasers are exposed in non-registration counties in England, against which the possession of the title deeds may prove abortive, but which are obviated by the general registry of deeds in Ireland?
5. What is the ordinary rule as to the change of title to stolen goods after sale, and what are the exceptions?
6. What arrears of rent may be recovered under the different circumstances for which the Statute of Limitations has provided?
7. What class of personal property of the surviving wife does not pass to the personal representatives of the husband?
8. In what instance does the personal representative of a personal representative represent the original assets, and under what circumstances does he not do so?
9. By what two classes of instruments can executory estates in land be created, so as to enable the owner to assert his title in a court of law when the occasion arrives for their being executed in possession?
10. In the execution of powers, what is the starting point from which the time is to be calculated for the purpose of keeping the estate created by the power within the rule against perpetuities?
11. Why is a deed of bargain and sale to trustees inadequate to create legal uses?
12. What is the present state of the law with respect to waiver of covenants by lessors?

EQUITY AND BANKRUPTCY.

Pass Examination.

1. In what case alone will a purchaser of an equitable estate be entitled to set up a legal estate afterwards got in, to gain priority over an antecedent equitable instrument? And upon what general maxim in Equity is such claim founded?
2. State any instance illustrative of the maxim, "Equity looks on that as done which ought to have been done."
3. In what instances is a Court of Equity not at liberty to act on its maxim, "Equity looks to the *intent* rather than the *form*"?
4. From what circumstances in relation to the jurisdiction of Courts of Law has that of Courts of Equity taken its rise?
5. *Parol* contract for a lease; under what circumstances will such contract be enforced by a Court of Equity?
6. What is an equitable mortgage?
7. What are the three requisites to bring a person within the jurisdiction of the Bankrupt Court?

Honor Examination.

Appendix,
No. 8.

General
Class Ex-
amination.

1. On what principle of Equity does the Court give a remainder-man the benefit of renewal of a lease taken absolutely by a tenant for life, upon the expiration (in his lifetime) of that original terminable lease which had been made the subject of limitation?
2. In what class of instruments is the doctrine of "Cypres" applied?
3. In what cases will a Court of Equity restrain waste by a person, although his estate is "without impeachment of waste"?
4. Limitation to A. B. for life, remainder to the first son who shall be born to A. B. and the heirs of his body, remainder to the second son who shall be born to such first son of A. B., for life, remainder to C. D.; what estates are created by such several limitations?
5. Fee simple conveyed to trustees, to the use of A. B., with remainder to his children, or some of them, in such shares, or to any one of them, as he shall by deed appoint; and in default of appointment, to C. D. in tail. A. B. in fraud of the power, and for his own personal interest, appoints to one particular child by agreement. On suit instituted in Chancery, the appointment is set aside. A. B. then appoints among his children equally. On those facts how does the estate go?
6. A. B. being seised in fee simple, becomes Bankrupt; his assignees sell the estate to C. D.; C. D. dies, and his heir-at-law sells the estate to E. F. What evidence of title should E. F., the purchaser, require?
7. Wife entitled to a legacy, the husband assigns it in mortgage; the husband dies, and the mortgagee files his bill in Equity to enforce payment of the legacy to the extent of the mortgage. What would be the final decree of the Court in such suit?
8. Equitable mortgage to A. B. by deposit of title deeds. Subsequent mortgage to C. D. by conveyance of the legal estate *without notice* of A. B.'s mortgage; but C. D., of course, has not got the title deeds with his conveyance. To what extent are the rights of C. D., as against A. B., affected by that fact?
9. A tenant being in possession of a farm as tenant from year to year, the landlord makes a parol promise to him of a lease. The tenant files his bill in Equity for specific performance, alleging the promise and the possession; what will be the decision of the Court on proof of the foregoing facts?
10. Purchaser of a trust estate, *without notice* of the trust, afterwards discovers the trust, and then obtains the conveyance from the trustee; what are his rights under the circumstances?
11. Trustee of stock: the person entitled to the beneficial interest assigns it for value to different persons in succession; no subsequent assignee having any knowledge of a previous assignment. They all serve notice of their respective claims upon the trustee; what are the relative rights of the assignees?
12. A. makes a lease of blackacre to B. B. executes a mortgage of his leasehold to C. B. next surrenders his lease to A., and A. makes another lease of the farm to D., with the knowledge of C., the mortgagee, who is aware that D. is building a house upon the farm, in total ignorance of the mortgage. C. brings an ejectment against D. to obtain possession of the land; D. having discovered the facts, files his bill in Equity against C. What should be the prayer of the bill?
13. What are the main features of difference between the procedure and power to bind persons in cases before the Court of Chancery and the Landed Estates Court respectively?
14. What are the rights of persons, dealing with a person afterwards declared a bankrupt, so far as they are affected by previous acts of bankruptcy.

FIRST YEAR LAW STUDENTS.

JURISPRUDENCE.—*Examiner, Professor Leslie.*

1. Edward I. has been called "the English Justinian." Comment on this denomination as applied to that sovereign.
2. Explain the origin of the distinction between law and equity at Rome.
3. Explain the origin of the distinction between law and equity in England.
4. Trace the connexion between the rise of towns and the growth and improvement of law in the middle ages.
5. Explain the connexion between the decline of trials by combat and ordeal, and the diffusion of the art of writing.
6. Give examples, in both Roman and English law, of the three agencies by which law is brought into harmony with social progress?
7. Explain the maxim: *Omnes homines naturæ aequales sunt*.
8. What are the three postulates at the foundation of International Law?
9. Explain the following: "The law of the middle ages relating to women, carries with it the stamp of its double origin."
10. Explain the origin of the unlimited liberty of bequest over personal property in England.
11. Primogeniture, according to Maine, introduces one of the most difficult problems of Jurisprudence. What is the difficulty, and how does he solve it?
12. What is the peculiar difficulty connected with primogeniture in England? What is the explanation?
13. Several considerations render it improbable that the feudal form of ownership was directly suggested by the Roman duplication of domainial rights.

SECOND YEAR STUDENTS.

JURISPRUDENCE AND CIVIL LAW.—*Examiner, Professor Leslie.*

1. State and criticise the leading divisions of law in the Institutes.
2. Give some account, with dates, of the nature of the codification effected by Justinian?
3. What is the primary division of rights in the Institutes?
4. Give examples of civil and natural modes of acquisition of property, respectively.
5. Explain the terms, *real and personal servitudes, urban and rural servitudes, res dominans, res serviens*.
6. Explain the uses of *usucapion* prior to Justinian, and the effects of his changes in respect to prescription.
7. "An ancient legal conception corresponds not to one but to several modern conceptions." Explain this, with examples.
8. What are the four classes of contracts, and the four sub-classes of consensual contracts?
9. What is the peculiar difficulty connected with the origin of primogeniture?
10. What distinctions of general Jurisprudence are not discoverable in Archaic Law?

11. If an island rises in a river, to whom does it belong?
12. If a man builds on another's ground, to whom does the building belong?

*Appendix,
No. 2.
General
Class Ex-
amination.*

THIRD YEAR STUDENTS.

POLITICAL ECONOMY.—*Examiner, Professor Leslie.*

1. What objections are there to describing Political Economy as the Science of exchanges or values?
2. Explain and comment on Mr. Mill's proposition that a demand for commodities is not a demand for labour?
3. What are the elements of gross profit? Apply your answer to explain the profit of a bill discounter, who lends capital which he himself has borrowed.
4. Trace the incidence of taxes—(1) on the profits of particular trades; (2) on the profits of all trades; (3) on land rent.
5. State Mr. Mill's theory of international values.
6. Explain the following:—"It is not an impossible supposition that by taxing our exports we might not only gain nothing from the foreigner, the tax being paid out of our own pockets, but might even compel our own people to pay a second tax to the foreigner."
7. Mr. Mill says: "There are but two cases in which duties on commodities can in any degree, or in any manner, fall on the producer." What are the two cases? Are they the only cases?
8. Show the bad economy of Mr. Pitt's system of borrowing, and also of his Sinking Funding.
9. Explain the following: "On the news of Bonaparte's landing from Elba, the price of bills advanced in one day as much as ten per cent."
10. State briefly the substance of Tooke's examination of the high range of prices during the long war with France, attributed by some to the inconvertibility of the currency, by others to war demand, and by Tooke himself mainly to a third cause.
11. Comment on the phrases "aggregate wages fund," "real wages."
12. Explain the proposition that rent does not enter into the cost of production of agricultural produce.
13. In what countries not possessing mines of their own are the prices of land, labour, and the produce of manual labour unassisted by machinery, highest, and why?
14. What are the chief advantages of foreign trade to a country which exports manufactures, and to one which exports raw produce, respectively?
15. The demand for money differs from the demand for other things?
16. There really is a closer relation between demand and supply in the case of money than in the case of other things?

THIRD YEAR STUDENTS.

ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

1. Give a short account of, and criticism on, the English drama; comparing it with either the Greek or the French.
2. Which of Shakespeare's plays refer to events or periods in English

- Appendix,
No. 2.* History, and how far are we to regard the poet as aiming at historical accuracy?
*General
Class Ex-
amination.* 3. Give the substance of the speech of the Bishop of Carlisle at the beginning of the 4th Act of Richard II.

Many a time hath banish'd Norfolk fought
For Jesu Christ, in glorious Christian field,
Streaming the ensign of the Christian cross,
Against black Pagans, Turks, and Saracens,
And, toil'd with works of war, retir'd himself
To Italy; and there, at Venice, gave
His body to that pleasant country's earth.

Write notes on the preceding passage.

Or,

Explain the plot of the play of King John.

Write notes on—

He talks to me, that never had a son.

And, noble Dauphin, albeit we swear
A voluntary zeal, and unurg'd faith
To your proceedings.

For Banquo's issue have I fil'd my mind,
For them the gracious Duncan have I murder'd,
Put rancours in the vessel of my peace
Only for them: and mine eternal jewel
Given to the common enemy of man.

4. Give some account of Pope. Mentioning especially the eminent contemporaries in his friendship, with whom he prides himself; and examine his merits as a poet.

5. What does Pope, in the Essay on Man, call (1) the Great Teacher; (2) the first law of Heaven?

Where ignorance is bliss
'Tis folly to be wise.

Illustrate this by a passage in the first Epistle of the Essay on Man.

Thus then to man the voice of nature spake,
"Go, from the creatures thy instructions take."

Of what creatures does the poet proceed to speak; and what lessons are to be learnt from them?

Or,

Quote from the Moral Essays, Pope's mention of the Bishop of Marseilles—Bacon—Villiers—Wharton—the Duchess of Marlborough; and explain the allusions.

Compare what he says in the Moral Essays about the Ruling Passion, with his language on the same subject in the Essay on Man.

6. Give a sketch of Sir W. Temple, mentioning especially what eminent scholar is connected with his personal history.

Or,

What were "the first artificial words," according to Adam Smith, or according to Dugald Stewart, and what is Max Muller's comment on their difference?

What evil does Whewell trace to indistinctness of idea? Illustrate his remarks by different sciences.

7. Dividing the periods of English Literature into—1, the Elizabethan era; or, the age from 1500—1625; or, 2, the era of the Restoration, 1660—1700; or, 3, the era of Queen Anne, &c., 1700—1750; or, 4, the era of George III., 1760—1820; select any one of these eras, and give reasons for preferring it to the others.

Appendix,
No. 8.
General
Class Ex-
amination.

SUBJECT FOR ESSAY.

LYRIC POETRY.

N.B.—To be illustrated by reference to the classical writers, and to modern poets of any country.

HISTORY.

1. Give a sketch of the proceedings of William the Conqueror, from the day of his landing in Sussex, in 1066, to the end of the year. How do they throw light on his name of the Conqueror?

2. English History is a series of struggles. The antagonists being king, clergy, nobles, and people. Each at different times seeking the aid of some other class. Elucidate this by a reference to some passage or passages in the History of England, between the battles of Hastings and Bosworth.

3. Give some account of Becket, Hubert de Burgh, Sir Walter Manny, Simon de Montfort, Archbishop Langton, the Duke of Bedford, the Duke of Suffolk, the Earl of Warwick.

4. Relate the events which first led to the connexion between England and Ireland.

5. Analyze the claim set up by Edward III. to the French throne.

6. Examine and explain the influence of the Crusades on Europe.

7. What were the Treaties of Bretigny, and of Troyes; and what was the origin of the close connexion which subsisted between France and Scotland?

8. When was it decided that the Salic Law did not prevail in England?

Or,

1. What was the state of affairs prevailing in England and in France in the year 1589? And in what degree were the interests of the two countries connected at that time?

2. Examine (where necessary, distinguishing between them) the principles which mainly prompted the resistance to Charles I., and those which led to the dethronement of James II.

3. In the reigns of Louis XIII., XIV., XV., XVI., what Cardinals rose to the chief authority in the government. Give a brief sketch of their careers, and describe their characters.

4. What were the Petition of Right, the Bill of Rights, the Act of Settlement, the Exclusion Bill, the Peerage Bill.

5. What gave occasion to the Drapier's Letters.

Appendix,
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amination.

6. Describe and compare the Mississippi Scheme and the South Sea Bubble.

7. Describe the Treaty of Dover, the Triple Alliance, the Peace of Utrecht, the Peace of Paris (1763), the Peace of Versailles (1783), the Peace of Westphalia, the Peace of Vervins, the Treaty of Campo Formio, the Treaty of Tilsit.

8. Give some account of Lord Strafford, Colbert, Louvois, Lord Bolingbroke, Turgot, W. Pitt.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

[First Year Students are required to answer questions 1, 2, 3, 4, 5; Second Year, 3, 4, 5, 6, 7; and Third and Fourth, 5, 6, 7, 8, 9.]

1. Describe the characters of the mucous membrane of the intestine over one of the patches of Peyer's glands, with the structure of the glands and their relations to the surrounding parts.

2. State the characters and arrangement of the capillary blood vessels of the following parts:—cornea, choroid membrane, muscular tissue, air vesicles of the lungs, Malpighian corpuscles of the kidneys.

3. State the nature of the act of absorption from the alimentary canal, by lacteals and veins, with the circumstances which influence it. How is the circulation in the lacteals produced and influenced?

4. Describe the microscopical appearances presented by a hair and a nail, and give an account of their structure and mode of growth.

5. Give an account of the arterial valves in the human body, and of the mode of their action. Describe the bulbus arteriosus and its valves, in reptiles and fishes.

6. Describe a Malpighian body of the spleen, with the nature of its connexion with blood-vessels.

7. Give an account of the development of the heart.

8. Describe the true vocal cords, with the muscles which regulate their position and tension respectively, and the mode of action of each muscle.

9. Describe Pflüger's view of the terminations of nerves in the salivary glands, and of the changes which occur in those glands during the act of secretion.

PRACTICAL ANATOMY.—*Examiner, Dr. Redfern.*

[In addition to making a dissection, First Year Students are required to answer questions 1, 2, 3, 4, 5; Second Year, 3, 4, 5, 6, 7; Third and Fourth Year, 6, 7, 8, 9, 10.]

1. Describe the characters of the articulatory edges and surfaces of the temporal and of the superior maxillary bones, mentioning the extent of each part for articulation with any other bone.

2. Describe the external lateral ligaments of the following articulations:—jaw, elbow, ankle, knee, wrist.

3. Give an account of the supinator brevis muscle, its attachments, the direction of its fibres, its relations and action.

4. Describe the arrangements of the muscular with the tendinous or aponeurotic fibres of the flexor carpi ulnaris, the popliteus, and the flexor longus pollicis pedis muscles.

5. Describe the arrangements and connexions of fasciæ in the immediate neighbourhood of Poupart's ligament.

6. Describe the hyo-glossus muscle, its attachments, the directions of its fibres, its relations and action.
7. Give an account of the arrangements and distribution of the posterior divisions of the sacral nerves.
8. State the course and relations of the ophthalmic artery, and enumerate its branches in the order of their origin.
9. Trace the course of the following branches of nerves, and describe their relations and distribution :—orbital branch of the superior maxillary; external branch of the superior laryngeal; inferior laryngeal.
10. Give an account of the position of the otic and sphenopalatine ganglia, and of the nerves connected with them.

*Appendix,
No. 8.
General
Class Ex-
amination.*

SURGERY.—Examiner, Dr. Gordon.

1. Describe briefly the various species of fractures of the leg, so well defined by the specimens in the College Museum, and their treatment.
2. Describe the mode of reducing dislocations of the upper end of the humerus by manipulation; and its comparative merits.
3. Describe the alterations in the hip joint from chronic rheumatic arthritis.
4. Give a brief description of the displacements that occur in fractures of the clavicle, and their treatment.
5. Give a brief historical outline of the history of the treatment of popliteal aneurism.

MEDICINE.—Examiner, Dr. Cumming.

1. Explain how collapse of a portion of lung and vesicular emphysema may be produced by bronchitis.
2. What are the physical signs and symptoms of acute tuberculosis of the lung?
3. What are the points of distinction between anaemia proper and chlorosis?
4. What are the symptoms and treatment of enteritis?
5. What are the causes of hyperaemia, and what is the condition of the blood vessels in active hypaemia?
6. What varieties of fremitus are observed in the chest, and what indications are to be drawn from the presence or absence of this sign?
7. What is the nature of the atheromatous change in arteries?
8. What is meant by crisis and lysis? and mention some diseases in which one or other of these is met with.
9. What are the physical signs of aortic regurgitation?
10. At what period of the disease does the eruption appear in typhus, enteric, and scarlet fevers, and what is its duration in each?

MATERIA MEDICA.—Examiner, Dr. J. Seaton Reid.

1. State in the order of sequence the proofs in support of the opinion, that medicines are absorbed before they act.
2. What fact is relied on by the supporters of the nervous theory, that medicines need not be absorbed, and how would you controvert it?
3. Name our ante-periodic medicines.
4. Write a prescription for the internal use of each by an adult.

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amination.

5. On what part of the brain does Dr. Harley consider that conium acts? Wherein does the elimination of Hyoscinum and Belladonna differ from it?
6. What diseases has it been found of great value in, and which is the most eligible preparation to use?
7. Prescribe the Succus Conii for a child seven years old.
8. Name the astringent principles of vegetables, and state wherein they differ.
9. Write a prescription for their internal use, and state why you would select one principle in preference to the other.
10. Name the medicines on the table and classify them therapeutically.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.
Examiner, Dr. R. F. Dill.

1. Give the names of the deformed pelves, and the diseases through which the deformities are produced. State also the irregularity which is found to occur most frequently.
2. What are the operations indicated in the different degrees of deformed pelves?
3. Define the terms—maternal dystocia, foetal dystocia, eclampsia, hyperaemia, anaemia, and toxæmia.
4. What are the objects of a vaginal examination in each stage of labour?
5. How is one hand distinguished from the other in a shoulder presentation? And how does the hand indicate the position of the child in utero?
6. What cases require podalic version? Name the accidents which are to be avoided in this operation.
7. Give the following measurements of the foetal head:—a, occipito-frontal; b, mento-bregmatic; c, biparietal.
8. What are the structural changes which the uterus undergoes during the period of gestation?
9. Give the names of the instruments and the medicines, in the order of their value, which should occupy a place in the obstetric case.

MEDICAL JURISPRUDENCE.—*Examiner, Professor Hodges, M.D.*

1. How may stains, produced by logwood, be distinguished from blood stains?
2. How are hæmin crystals to be obtained from blood?
3. Describe the modes in which death may be produced by drowning?
4. How may the coloured reactions of strychnine be obtained in the presence of morphine?
5. How is alcohol detected in the contents of the stomach?
6. State the direct causes of death from wounds.
7. Describe the symptoms produced by a poisonous dose of phosphorus.

CHEMISTRY.—*Examiner, T. Crawshaw Charles, M.D.**Appendix,
No. 8.*General
Class Ex-
amination.*Pass Paper.*

1. Describe the different thermometers in use.
2. How are the latent and specific heats of a body ascertained?
3. Describe the different parts of the solar spectrum.
4. How are the following bodies prepared?— NH_3 , H_2SO_4 , CH_4 , H_2S , K , $\text{C}_2\text{H}_2\text{O}_2$, and CHCl_3 .
5. Name all the acids of phosphorus, and give their formulae and characteristic properties.
6. What are the tests for As, Sb, and Fe?
7. Classify saccharine bodies, and give their formulae and characteristic properties.
8. What is the volume of 12 grains of hydrogen gas at 15°C ?

Honor Paper.

1. Describe the methods employed by Dalton and by Regnault for determining the tension of aqueous vapour.
2. Give an account of Melloni's researches on the absorption of heat by solids and liquids; and of those of Tyndall on the absorptive powers of vapours and gases.
3. Give a short sketch of the dynamical theory of heat.
4. Give as complete an outline as you can of Dr. Andrews' experiments on carbonic acid, and of his conclusions therefrom.
5. Define the following terms:—atom, molecule, anhydride, acid, triad, basic salt, allotrope, isomerism, and polymerism.
6. How are the following bodies prepared?— N , NH_3 , HCN , NO , N_2O , CH_4 , C_2H_2 , and SiF_4 .
7. Write in full all the reactions in the preparation of phosphorus from bone earth.
8. Give the reactions when nitric acid of different strengths acts on As_2O_3 , Ag , Zn , Sn , and Cu .
9. Write the formulae of the following bodies:—Borax, Tartar Emetic, Metastannic acid, Chloral, Chloroform, Tartaric acid, Carboic acid, Nitro-benzol, Aniline, Benzoic acid, and Naphthalin.
10. What is a glass? What is the composition of the different descriptions of glass used in the arts?
11. Give a sketch of the theory of types, with examples.
12. What are the general methods for preparing the hydrides of the alcohol radicals, and how are the chlorides, acetates, and alcohols obtained from them?

FRENCH.—*Examiner, Professor Meissner.**Medical Students.*

I.—Translate into French:

Does he bring good news? He has exposed himself to the greatest danger. We never rise before seven o'clock in winter. Whatever your talents may be, you will not succeed without application. These ladies were quite surprised to see him. Tell me what you think. Here is the gentleman of whom you speak. My father, mother, and brothers are

Appendix,
No. 2.
General
Class Ex-
amination.

in the country. You have taken my hat, and I have taken yours. Which of these watches will you have, this one or that one? The soldiers excited one another. Do you not recognise me? Everything she does, she does well.

II.—The empire of Charlemagne was a structure erected in so short a time, that it could not be permanent. Under his immediate successor it began to totter; and soon after fell to pieces. The crown of Germany was separated from that of France, and the descendants of Charlemagne established two great monarchies, so situated as to give rise to a perpetual rivalry and enmity between them. But the princes of the race of Charlemagne who were placed on the Imperial throne, were not altogether so degenerate as those of the same family who reigned in France. In the hands of the former the royal authority retained some vigour, and the nobles of Germany, though possessed of extensive privileges as well as ample territories, did not so early attain independence.—ROBERTSON.

III.—Translate into English :

An mois d'août de l'an 1060, le roi de France, Henry Ier, ayant voulu prendre un médecine de précaution, son médecin, qui passait pour le plus habile de l'époque, lui administra on ne sait quelle potion dont il lui promit merveille ; seulement, la nature de ce médicament était telle, qu'il fallait bien se garder de boire avant qu'il eût opéré, autrement on tombait en danger de mort. Le médecin ne manqua pas d'en faire la recommandation et s'éloigna. La saison était chaude : le roi sentit bientôt une soif dévorante ; mais ses gens, avertis, faisaient semblant de ne pas entendre ses plaintes, tant qu'à la fin, il prit à part un de ses chambellans, et se servant avec lui de ces manières de persuader que possèdent les rois, il en obtint un plein verre d'eau. Il but donc, et empira incontinent de telle sorte, que le médecin, à son retour, n'eut qu'à lui conseiller de régler au plus vite les affaires de sa succession. Il le fit en homme courageux qu'il était, se confessa, communia et ferma les yeux le jour même, 29 août.—QUICHERAT.

GREEK.—Examiner, Professor MacDouall.

FIRST YEAR STUDENTS.

Translate the following extract from the *Cyropaedia* of XENOPHON :

καὶ ὁ Κῆρος λαβὼν ἰδίῳ τε ἀραγῇ τοῖς παῖσι καὶ ἡμα ὄντιν· “ὦ παῖδες! ὡς ἀρα ἰδύνασθαι” ἔτε τὰ ἐν τῇ παραδείσῳ θηρία^α ἰδεῖν^β· ἱμαῖον ἱμοῖσι δοκεῖ εἶναι οἰόντων^γ· αἱ τὲς διδραχμαῖς ζῆα θηροφύ^δ· πρῶτον μὲν γὰρ ἐν μικρῇ χωρίῳ ἦν, ἵππων λατῶν^ε καὶ ψευδαλῶν^ς· καὶ τὸ μὲν αὐτῶν χωλὸν ἦν, τὸ δὲ κολεβόν^ς τὰ δ' ἐν τοῖς ἄραισι καὶ λαμβάνει θηρία ὡς μὲν καλὰ, ὡς δὲ μεγάλα, ὡς δὲ λιπαρὰ ἱφαίνοντο^ς· καὶ αἱ μὲν ἔλαφαι ὥσπερ πτηναὶ^ς φέλοντο^ς· εἰς τὸν οὐρανὸν οἱ δὲ κάπροι, ὥσπερ τοὺς ἀνδρας φασι τοῖς ἀνδρείους, ὁρῶσαι^ς ἰδύνασθαι^ς· ἐπὶ δὲ τῆς πλατύτητος οὐδὲ ἀμαρτεῖν^ς οἷον τ' ἦν αὐτῶν· καλλίως δὲ, ἱμαῖ, “ἱμοῖσι δοκεῖ καὶ τοῦνκέστα εἶναι ταῦτα ἢ ζῶντα ἰεῖναι τὰ περιπεδομημένα^ς· ἀλλ' ἀρα^ς ἄν,” ἱμαῖ, “ἀρεῖται^ς καὶ ὑμεῖς οἱ πατέρες ἐπὶ θήραν^ς”· “καὶ βελτίως γ' ἄν,” ἱμαῖσαν^ς, “εἰ Ἀστυάγης κτελείει^ς”· καὶ ὁ Κῆρος εἶπε· “τίς σὺν ἂν ἡμῖν Ἀστυάγης μηχανήσῃ^ς”· “τίς γὰρ δι^ς,” ἱμαῖσαν^ς, “σοῦ γε ἱκανώτερος πείσαι^ς”· “ἀλλὰ μὲν τὸν Δία,” ἱμαῖ, “ἐγὼ μὲν οὐκ οἶδ' ὅστις ἀσθρόνους γυγνῆμα^ς· οὐδὲ γὰρ οἷός τ' εἶμι λέγειν ἱγῶγε οὐδ' ἀναβλέπειν πρὸς τὸν πάππον ἐκ τοῦ ἰσού ἐν δέντρῳ· ἦν δὲ τοσοῦτον ἰκτεῖν^ς, διδραχμα^ς·” ἱμαῖ, “μη παντάπασιν^ς βλάξῃ^ς τις καὶ ἡλίθιος^ς γίγνηται· παιδάριον^ς δ' ὡς δυνάτατος λαλεῖν ἰδύσκον εἶναι,” καὶ οἱ παῖδες εἶπον.

"πρωτὸν λέγας τὸ πρῶμα, εἰ μὲν ἐπὶ ἡμῶν ἂν¹⁰ τι δέξῃς δυνήσῃ πράττειν ἄλλ' ἄλλως τῶς τὸ ἐπὶ σὲ ἀνάγκη ἵσται δοῖσθαι ἡμᾶς." ἀκούσας δὲ ταῦτα ὁ Κῦρος ἐδόχθη,¹² καὶ συγῇ ἀπέλθων διασκελεσάμενος ἑαυτῷ ταλμῶν εἰσηλθεὶς ἐπιβουλεύσας ὅπως ἂν ἀνυπόστατα¹³ εἴποι πρὸς τὸν πάππον καὶ διαπράξειεν¹⁴ αὐτῷ τε καὶ τοῖς πασίν ὧν ἴδοντο.

Appendix,
No. 6.
General
Class Ex-
amination.

1. Parse fully and accurately the words to which numbers from 1 to 18 are affixed.
2. Derive or decompound the words to which numbers from 19 to 30 are affixed.
3. Explain such constructions or idioms as may appear most noticeable.

I.—Translate perspicuously the following lines from the *Suppliants* of EURIPIDES :—

οὐδὲν Κρέων τοῖσδ' ἂν τεκμήρεται λόγοις,
ἀλλ' ἤστ' ἐφ' ὅπλοις σίγα.⁵ ποιμένες δ' ὄχων
τετραόρων⁶ καθήρχων ἐντέθεν μάχης·
ἴκραν δὲ θαλάσσαντις⁷ ἀλλήλων ὄχους
παραιβάτας⁸ ἱστῆσαν⁹ ἐς τάξιν¹⁰ ὁρᾶς.
χα¹¹ μὲν σιδήρῳ διμάχονθ', οἱ δ' ἱστράφον
πῶλους ἐς ἀλεὴν αἰθέρι ἀρματινλάται.¹²
ἰζὼν δὲ Φόρβας, ὅς μοναμπίκων¹³ ἀναξ
ἦν τοῖς Ἑρεχθεΐδαισι, ἀρμάτων ὄχλον,
οἱ τ' αὖ τὸ Κῆδμον διεφύλασσον ἱππικόν,
συνήψαν¹⁴ ἀλεὴν κἀκράτου¹⁵ ἥσσαντε¹⁶ τε.
λείψων¹⁷ δὲ ταῦτα κοῖτι κλέων, —καὶ γὰρ ἦν¹⁸
ἐνθ' ἄρματ' ἡγωνίζεθ'¹⁹ οἱ τ' ἐπιμβάται,²⁰ —
τάκται²¹ παρόντα πολλά πήματ'²² ὅκκ' ἔχω
τί πρῶτον εἶπω,²³ πότερα τῇν ἐς οἴρανδον
κόνιν προσαντίλλουσαν,²⁴ ὥς πολλὰ παρήν,
ἣ τοὺς ἄνω τε καὶ κάτω φορευμένους²⁵
ἱμῶσιν²⁶ αἵματός τε φοινίω²⁷ ῥοάς,
τῶν μὲν πιπνόντων,²⁸ τῶν δὲ—θραυσθέντων²⁹ εἴφρων—
ἐς κρᾶτα³⁰ πρὸς γῆν ἐκυβιστόντων³¹ βίβρ
πρὸς ἀρμάτων τ' ἀγαίον³² λεπνόντων βίον.
μικῶντα δ' ἱπποῖς ὡς ὑπαίθετος³³ στρατὸν
Κρέων τὸν ἐνθένδ', ἴδαν³⁴ λαβὼν χερσὶ
χωρεῖ πρὶν ἰλθὼν ἱερμάχοις δυσθυμίαν.³⁵
καὶ μὴν τὰ θεῖως γ' ὅκκ' ἐκνυ διεσθάρη,³⁶
ἀλλ' ἴσ³⁷ ὅθως λάμπρ' ἀνιμπίσας³⁸ ὅπλα³⁹
στρατὸν δ' ἄπαντις συμπατάξαστις⁴⁰ μίσον
ἐκτενον, ἐκτενοντο, καὶ παρηγγύνον⁴¹
κλειυμένον ἀλλήλοισιν⁴² σὺν πολλῷ βεῖ.

- II.—1. Parse fully and accurately every word to which a number (from 1 to 37) is affixed.
2. Derive or decompound every word to which an Italic letter (from α to λ) is affixed.
3. (a.) Why is ι treated as light (or "short") in *πιπνόντων* and *εἴφρων*, and so likewise ο in *ὅκκ'*? (b.) Point out every instance of a trisyllabic foot in these lines, and state the conditions on which such a foot is admitted into an iambic trimeter.

Appendix,
No. 8.

SECOND YEAR STUDENTS.

General
Class Ex-
amination.I.—Translate the following passage from Book VI. of *ΞΕΝΟΦΩΝΟΣ* *Anabasis* :—

“νομίζω δ’ ἔγωγε, εἰ ἐκείναι ἀπολοῦνται,¹ οὐδ’ ἡμῖν εἶναι οὐδεμίαν σωτηρίαν, οἷμαι μὲν πολλῶν ὄντων πολέμιον, οἷμαι δὲ τεθαρρήμετων.² κρείτιστον οὖν ἡμῖν ὡς τάχιστα βοηθῆν τοῖς ἀνδράσιν, ὥπως, εἰ ἐπὶ εἰσὶ σοῖο, σὺν ἐκείνοις μαχώμεθα καὶ μὴ μόναι λιψήντες μόνοι καὶ κινδυνεύμεν. οὖν μὲν οὖν στρατοπεδευσάμεθα προύχοντες, ὅσον ἂν δεῦρ’ αἰεὶ εἶναι εἰς τὸ διαπορευέσθαι³ ἕως δ’ ἂν πορευόμεθα, Τιμασίῳ ἔχον τοὺς ἱππεῖς προελαινώειν ἱφάρῳ ἡμῶς καὶ σκοπεῖν τὰ ἐμπροσθεν, ὡς μηδὲν ἡμᾶς λάθῃ.”

ἀλλὰ δὴ ἐκὶ μὲν οὐτε πλεῖα ἔστιν εἰς ἀποπλευσάμεθα⁴ μένουσι τε αὐτοῖς οὐδὲ μᾶς ἡμέρας ἱστῆναι τὰ ἐπιτήδεια.⁵ τῶν δὲ πολιορκουμένων ἀπολομένων σὺν τοῖς Χειρισφόρ’ μόνοις κείνοις ἔστι διακινδυνεύειν ἢ τῶνδε σωθέντων⁶ πάντας εἰς ταῦτάς⁷ ἰλθόντας κενεῖ⁸ τῆς σωτηρίας ἔχουσιν. ἀλλὰ χρὴ παρασκευασαμένους τὴν γνώμην πορεύεσθαι, ὡς οὐκ ἢ ἐκείνους τελευτήσῃαι ἔστιν ἢ ἀλλοῖσιν ἔργον ἐργάσασθαι Ἑλλήνας τοσοῦτους σώσαντας. καὶ ὁ θεὸς ἔως ἀγχι οὕτως, ὅς τοις μεγαληγορήσαντας⁹ ὡς κλίον φρονούντας ταπεινώσαι βεβλήται ἡμᾶς δὲ τοὺς ἀπὸ θεῶν ἀρχομένους ἐντιμωτέρους ἐκείνων καταστήσῃ.¹⁰ ἀλλ’ ἔπειθαι χρὴ καὶ προεῖχιν τὸν νοῦν, ὡς ἂν τὸ παραγγελλόμενον δέησθαι ποιῇν.”

1. Parse fully and accurately the words to which the numbers from 1 to 7 are affixed.

2. Decompose the words numbered 8, 9, 10.

3. Explain such constructions or idioms as may appear most noticeable.

THIRD AND FOURTH YEAR STUDENTS.

Translate perspicuously the following extracts from the *Μένων* of *PLATON* :—

I.—ΣΩ. ἰσχυρῶς αὖ, ὦ Μένων, οὐδ’ ἔστιν ἤδη βαδίζων δεῖ τοῦ ἀναμνησέσθαι; ὅτι τὸ μὲν πρῶτον βδελύμενος εἶμι, ὅτις ἔστιν ἡ τοῦ ἐκτύπουτος χωρίου γραμμὴ, ὥσπερ εἶδὲ νῦν περ εἶδεν, ἀλλ’ οὖν φέρεται ὅτι αἰεὶ εἶδεν καὶ θαρβύλιος ἀπεκρίνεται ὡς εἶδός καὶ οὐκ ἤγαστο ἀπορίν¹ οὖν δὲ ἤγαστο ἀπορίν² ἤδη καί—ὥσπερ οὐκ εἶδεν—οὐδ’ εἶπεν εἶδεναι. ΜΕΝ. ἀληθεῖς λέγεις. ΣΩ. οὐκοῦν νῦν βέλτερον ἔχει περὶ τὸ πρᾶγμα ὃ οὐκ εἶδεν; ΜΕΝ. καὶ τοῦτό μοι δοκεῖ. ΣΩ. ἀπερὶν οὖν αὐτὸν ποιήσαντες καὶ νωρὲν ὥσπερ ὁ νόμος μὲν τι ἐβλάφειν; ΜΕΝ. οὐκ ἔμελλε δοκεῖ. ΣΩ. προύργον γοῦν τι πεποιθήκαμεν, ὡς ἔσκε, πρὸς τὸ ἐξερεῖν ὅτι ἔχει. οὖν μὲν γὰρ καὶ ζητήσιν ἂν ἡδέως οὐκ εἶδός, τότε δὲ βέβαιος ἂν καὶ πρὸς πολλοὺς καὶ πολλὰς φέρ’ ἂν εἰ λέγειν περὶ τοῦ διπλασίου χωρίου, ὡς δὲ διπλασίον τὴν γραμμὴν ἔχειν μήκει. ΜΕΝ. ἔσκεν. ΣΩ. οἶμαι οὖν ἂν αὐτὸν πρότερον ἐπιχερῆσαι ζητεῖν ἢ μανθάνειν τοῦτο, ὃ φέρεται εἶδεναι οὐκ εἶδός, πρὶν εἰς ἀπορίαν κατεπίσσειν³ ἢ γρησάμενος μὴ εἶδεναι καὶ ἐπύθεσθαι τὸ εἶδεναι; ΜΕΝ. οὐ μοι δοκεῖ, ὦ Σώκρατες. ΣΩ. ὥσπερ ἄρα νωρὲς ἔσκεν. ΣΩ. τί σοι δοκεῖ, ὦ Μένων; ἔστιν ἥντινα δόξαν οὐκ αὐτοῦ οὗτος ἀπεκρίνατο; ΜΕΝ. οὐκ, ἀλλ’ αὐτοῦ. ΣΩ. καὶ μὲν οὐκ εἶδεν γὰρ, ὡς ἔφαμεν ὀλίγον πρότερον. ΜΕΝ. ἀληθεῖς λέγεις. ΣΩ. ἐνῆσαν δὲ γὰρ αὐτῷ αὐταὶ αἱ δόξαι. ἢ οὐ; ΜΕΝ. ναί. ΣΩ. τῷ οὐκ εἶδεναι ἄρα περὶ ὅτι ἂν μὴ εἰδῇ ἔνιστον ἀληθεῖς δόξαι περὶ τούτων ὅτι οὐκ εἶδεν. ΜΕΝ. φαίνεται. ΣΩ. καὶ νῦν μὲν γὰρ αὐτῷ ὥσπερ δυναὶ ἄρτι ἀναμνησέσθαι αἱ δόξαι αὐταί. εἰ δ’ αὐτὸν τις ἀνείρεται πολλὰς ταῦτά ταῦτα καὶ πολλοῦ, οἷόςθ’ ὅτι εὐαίσθητος οὐδένως ἦεν ἀκριβῶς ἐπιστήσεται περὶ τούτων. ΜΕΝ. ἔσκεν. ΣΩ. οὐκοῦν οὐδένως ἐπιδάξαντος ἀλλ’ ἐρωτήσαντος ἐπιστήσεται ἀναλαβὼν αὐτὸς ἐκ αὐτοῦ τὴν ἐπιστήμην; ΜΕΝ. ναί. ΣΩ. τὸ δ’ ἀναλαβεῖν αὐτὸν ἐν αὐτῷ ἐπιστήμῃ οὐκ ἀναμνησέσθαι ἔστι; ΜΕΝ. πάντῃ γὰρ.

II.—1. What would you remark (a) upon the argument here drawn from the *Lad's* examination in favour of the theory of reminiscence, and

(b) upon the aspect of that theory in this passage as compared with the treatment of it in other Platonic dialogues? Appendix, No. 2.

2. Describe the process by which the Lad discovers that a square may be doubled not by doubling the sides which contain it but by constructing a square upon its diagonal. General Class Examination.

III.—1. Describe the problem referred to in a passage which—though very corrupt—may be thus provisionally represented:—*ὅπως οἶδα εἰ οἶδν ῥ' ἐστὶ τοῦτο, ἀλλ' ὥσπερ τινὰ ἐκθέσειν προὔργον ὁμαι ἔχειν πρὸς τὸ πρᾶγμα ταῦνδε· εἰ μὲν ἐστὶ τὸ χωρίον τοιοῦτον οἶον, ἦν τις παρὰ τὴν ἐνταθεῖσαν αὐτοῦ γραμμὴν παρατείνει, ἐλλείπειν αὐτὸ τοῦ περιεταμένου κύκλου, ἄλλοι τε συμβαίνειν μοι δοκεῖ, καὶ ἄλλο αὖ, εἰ ἄδύνατόν ἐστι ταῦτα παθεῖν.*

2. What ethical question is spoken of in the context as admitting a similarly hypothetic discussion?

LATIN.—*Examiner, Professor Wm. Nesbitt, M.A.*

FIRST YEAR STUDENTS.

Translate :

1. Tandem nequiquam iumentis atque hominibus fatigatis castra in ingo posita, acerrime ad id ipsum loco purgato: tantum nivis fodiendum atque egerendum fuit. inde ad rupem muniendam, per quam unam via esse poterat, milites ducti, cum caelendum esset saxum, arboribus circa immanibus diiectis detruncatisque struem ingentem lignorum faciunt, eamque, cum et vis venti apta faciendo igni ecorta esset, succendunt, ardentisque saxa infuso aceto putrefaciunt. ita torridam incendio rupem ferro pandunt molliuntque anfractibus modicis clives, ut non iumenta solum sed elephanti etiam deduci possent. quadriduum circa rupem consumptum iumentis prope fame absumptis: nuda enim fere cucumina sunt, et si quid est pabuli, obruant nives. inferica valles apricosque quosdam colles habent, rivosque prope silvas et iam humano cultu digniora loca. ibi iumenta in pabulum missa, et quies muniendo fessis hominibus data triduo. inde ad planum descensum et iam locis mollioribus et accolarum ingenia.—*Livy, xxi., 37.*

2. Experiri iuvat, utrum alios repente Carthaginienses per viginti annos terra ediderit, an iidem sint, qui ad Aegatis pugnaverant insula, et quos ab Eryce duodevicensis denariis aestimatos emisistis et utrum Hannibal hic sit aculus itinerum Herculis, ut ipse fert, an vectigalis stipendiariusque et servus populi Romani a patre relictus: quem nisi Saguntinum scelus agitareret, respiceret profecto, si non patriam victam, domum certe patremque et foedera Hamilcaris scripta manu, qui iussus ab consule nostro praesidium deduxit ab Eryce; qui graves impositas victis Carthaginiensibus leges fremens maerensque accipit; qui decedere Sicilia stipendium populo Romano dare pactus est. itaque vos ego, milites, non eo solum animo quo adversus alios hostes solotis pugnare velim, sed cum indignatione quadam atque ira, velut si servos videatis vestros arma repente contra vos ferentes.—*Ibid., 41.*

(a.) Give the principal tenses of *fodio, caedo, pando, relinquo, respicio, paciscor, emitto, vinco, video.*

(b.) Explain briefly the following: *ad viam muniendam; et iam humano cultu digniora loca; vectigalis stipendiariusque.*

(c.) Give the etymology of *fatigo, purgo, anfractus, apricus, iumentum, consul, stipendium, paciscor.*

Appendix,
No. 2.
General
Class Ex-
amination.

3. Magna dis immortalibus habenda est atque huic ipsi Iovi Statori, antiquissimo custodi huius urbis, gratia, quod hanc tam tacitam, tam horribilem tamque infestam rei publicae pestem totiens iam effugimus. Non est saepius in uno homine summa salus periclitanda rei publicae. Quam diu mihi consuli designato, Catilina, insidiatus es, non publico me praesidio, sed privata diligentia defendi. Quum proximis comitiis consularibus me consulem in campo et competitores tuos interficere voluisti, compressi conatus tuos nefarios amicorum praesidio et copiis, nullo tumultu publicae concitato: denique, quotienscumque me petisti, per me tibi obstiti, quamquam videbam perniciem meam cum magna calamitate rei publicae esse coniunctam. Nunc iam aperte rem publicam universam petis: templa deorum immortalium, tecta urbis, vitam omnium civium, Italiam totam ad exitium ac vastitatem vocas. Quae re quoniam id, quod est primum et quod huius imperii disciplinaeque maiorum proprium, facere nondum audeo, faciam id, quod est ad severitatem lenius et ad communem salutem utilius. Nam si te interficere iussero, residebit in re publica reliqua coniuratorum manus. Sin tu, quod te iam dudum hortor, exieris, exhausteris ex urbe tuorum comitum magna et perniciose sentina rei publicae. Quid est, Catilina? num dubitas id me imperante facere, quod iam tua sponte faciebas? Exire ex urbe iubet consul hostem. Interrogas me, num in exilium? Non iubeo: sed, si me consulis, suadeo.—CICERO—In *Cat.* i., 5, 11.

(a.) Who were Catiline's competitors?

(b.) Explain the expressions: *huic Iovi Statori*; *ad severitatem lenius*; *tuorum comitum sentina rei publicae*.

For Pass.

Translate into Latin:

It is not the part of a wise man to expose himself to so many dangers of disease and death, only upon hope of a happy issue which yet befalls very few. An old man of an ill constitution, but living orderly, is more sure of life than the most strong young man who lives disorderly. But some, too much given to appetite, object that a long life is no such desirable thing, because that when one is over sixty-five years old, all the time we live after is rather death than life. But these err greatly, as I will show by myself, recounting the pleasures and delights in this age of eighty-three, which I now take, and which are such that men generally count me happy.

For Honors.

Translate into Latin prose:

Seeing the foe in front, he marched on through the pass till it widens into the plain, and then, enveloped by a dense mist from the lake, he was suddenly attacked on every side by Hannibal's main force in front, and by the cavalry and other ambushers in the rear. Flaminius then saw he was entrapped, but nothing daunted he made a more desperate struggle for the victory; and so furious was the contest that ensued, so intent were all on the work of destruction, that an earthquake which overthrew many cities in Italy, turned aside the course of rapid rivers, and cast down even mountains in mighty ruin, was unknown, unfelt by any of the combatants. For three hours did the Romans maintain the unequal contest, till at length when their leader Flaminius fell, they broke and fled, rushing some to the mountain steeps, which they were

not suffered to climb, others to the lake in which they vainly sought safety. Six thousand, who had broken the foe at the first attack, and had retired to a height to await the issue of the fight, effected their escape, only to be captured on the morrow. Ten thousand scattered fugitives carried the news to Rome.

Appendix,
No. 8.
General
Class Ex-
amination.

Additional for Honors.

Translate, adding brief notes where you think it necessary :

1. At, si quos haud ulla viros vigilantia fugit,
Ante locum similem exquirunt, ubi prima paretur
Arboribus eeges et quo mox digesta feratur,
Mutatam ignorent subito ne semina matrem.
Quin etiam coeli regionem in cortice signant,
Ut, quo quaeque modo steterit, qua parte calores
Austrinos tulerit, quae terga obverterit axi,
Restituant : adeo in teneris consuescere multum est.

Collibus an plano melius sit ponere vitem,
Quaere prius. Si pinguis agros metabere campi,
Densa sere : in denso non segnior ubere Bacchus ;
Sine tumultu acclive solum collesque supinos,
Indulge ordinibus ; nec secius omnis in unguem
Arboribus positus secto via limite quadret.
Ut saepe ingentes bello quum longa cohortes
Explicuit legio, et campo stetit agmen aperto,
Directaeque acies ne late fluctuat omnis
Aere residentem tellus, ne dum horrida miscet
Proelia, sed dubius mediis Mars errat in armis ;
Omnia sint paribus numeris dimensae viarum,
Non animum modo uti pascat prospectus inanem,
Sed quia non aliter vires dabit omnibus aequas
Terra, neque in vacuum poterunt se extendere rami.

VIRGIL—*Georg.* ii., 265–287.

2. Per ecce scitus puer est natus Pamphilo.

Deus quae ut sit superstes, quandoquidem ipse ingenio bono,
Quocumque huic veritas optumae adulescenti facere iniuriam.
Si. Vel hoc quis non credat, qui te norit, abs te esse ortum ? Da.

Quidnam id est ?

Si. Non inperabat coram, quid facto esset opus puerperae :
Sed postquam egressast, illis quae sunt intus clamat de via.
O Dana, itan contemnor abs te ? aut itane tandem idoneus
Tibi uideor esse, quem tam aperte fallere incipias dolis ?
Saltem accurate, ut metui uidear certe, si rescuerim.

Da. Certe hercle nunc hic se ipse fallit, haud ego. Si. Edixi tibi,
Interminatus sum, ne faceres : num veritatis ? quid retulit ?
Credon tibi hoc nunc, peperisse hanc e Pamphilo ?

Da. Teneo quid erret, et quid agam habeo. Si. Quid taces ?

Da. Quid credas ? quasi non tibi renunciata sint haec sic fore.

Si. Mihi quisquam ? Da. Eho an tute intellexisti hoc adsimulari ?

Si. Irrideor.

Da. Renuntiastumst : nam qui tibi istaec incidit suspitio ?

Si. Qui ? quia te noram. Da. Quasi tu dicas, factum id consilio meo.

Si. Certe enim scio. Da. Non satis me pernoti etiam, qualis sim,
Simo,

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General
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amination.

Si. Egon te? Da. Sed siquid tibi narrare ocepisti, continuo dari Tibi verba censes falso: itaque berde nil iam muttire audeo.
Si. Hoc ego scio unum, neminem peperisse hic. Da. Intellexi. Sed nilo secius mox puerum huc deferent ante ostium.
Id ego iam nunc tibi, ere, renuncio futurum, ut sis scieus, Ne tu hoc posterius dicas Davi factum consilio aut dolis:
Prorsus a me opinionem hanc tuam esse ego amotam volo.

TERENCE—*And.*, III., 2, 6-30.

3. Scan the lines "Mihin quisquam," etc. to "Simo," noting and explaining any metrical peculiarities you observe.

4. Translate and explain the following:

- (a.) Liberatus sum hodie, Dave, tua opera. Da. Ac nullus quidem.
(b.) Dictum ac factum inveniet causam.
(c.) Nam quod tu speres propulsabo facile; uxorem his moribus nemo dabit.

- (d.) Hicine me si imparatum in veris nuptiis
Adortus esset, quos mihi ludos redderet?

(Distinguish the last phrase from *ludos aliquem facere*, *ludos praebere*, *ludum alicui dare*.)

- (e.) Quid Davus narrat? Da. Aequae quicquam nunc quidem.
(f.) Hoc ubi, non a stirpe valent caesaeque reverti
Possunt atque ima similes revirescere terra.

- (g.) dum se laetus ad antras
Palmas agit laevis per purum immissus habenis.

- (h.) Praemiaque ingenis pagos et compita circum
Thesidae posuere, atque inter pocula laeti
Mollibus in pratis unctos saluere per utres.

- (i.) Ut quum carceribus sese effudere quadrigae,
Addunt in spatia,—

SECOND YEAR STUDENTS.

A. Translate, at least *two*, and not more than *three*, of the subjoined extracts, adding brief notes, where a word, a construction, or an allusion seems to require it:

1. Appian in sermonibus antea dictitabat, postea dixit etiam in senatu palam; sese, si licitum esset legem curiatam ferre, sortiturum esse cum collega provinciam; si curiata lex non esset, se paraturum cum collega tibiue successorum; legem curiatam consuli ferri opus esse, necesse non esse; se, quoniam ex senatus consulto provinciam haberet, lege Cornelia imperium habiturum, quoad in urbem introisset. Ego quid ad te tuorum quisque necessariorum scribat nescio; varias esse opiniones intelligo. Sunt qui putant posse te non decedere, quod siue lege curiata tibi succedatur; sunt etiam qui, si decedas, a te relinqui posse qui provinciae praesit. Mihi non tam de iure certum est—quamquam ne id quidem valde dubium est,—quam illud, ad tuam summam amplitudinem, dignitatem, libertatem, qua te scio libentissime frui solere, pertinere, te sine ulla mora provinciam successorii concedere, praesertim quum sine suspitione tuae cupiditatis non possis illius cupiditatem refutare. Ego utrumque meum puto esse, et quid sentiam ostendere et quod feceris defendere.
—CICERO—*Ad Fam.*, i., 9, 25.

2. Quod est igitur meum 'triste consilium'? ut discederem fortasse in aliquas solitudines? Nocti enim non modo stomachi mei, cuius tu similem quondam habebas, sed etiam oculorum in hominum insolentium in-

dignitate fastidium. Accedit etiam molesta hæc pompa lictorum meorum nomenque impari, quo appellor. Eo si onere carerem, quamvis parvis Italiæ latebris contentus essem. Sed incurrit hæc nostra laurus non solum in oculos, sed iam etiam in vultus malevolorum. Quod quum ita esset, nil tamen unquam de protectione nisi vobis approbantibus cogitavi. Sed mea prædola tibi nota sunt; in his mihi necesse est esse, ne amicis molestus sim. Quod autem in maritimis facillime sumi, moveo non nullis suspicionem velle me navigare; quod tamen fortasse non noli, si possem ad otium: nam ad bellum quidem qui convenit? præsertim contra eum, cui spero me satis fecisse, ab eo, cui iam satis fieri nullo modo potest?—*Ibid.*, ii, 16, 2.

3. Si ipsa res publica tibi narrare posset quo modo sese haberet, non facilius ex ea cognoscere posses quam ex liberto tuo Phania; ita est homo non modo prudens, verum etiam, quod invet, curiosus. Quapropter ille tibi omnia explanabit; id enim mihi et ad brevitem est aptius et ad reliquas res providentius. De mea autem benevolentia erga te, etsi potes ex eodem Phania cognoscere, tamen videntur etiam aliquæ meæ partes. Sic enim tibi persuade, carissimum te mihi esse quum propter multas suavitates ingenii, officii, humanitatis tuæ tum quod ex tuis litteris et ex multorum sermonibus intelligo omnia, quæ a me profecta sunt in te, tibi accidisse gratissimæ. Quod quum ita sit, perficiam profecto, ut longi temporis usuram, qua caruimus intermissa nostra consuetudine, et gratia et crebritate et magnitudine officiorum meorum sarciam: idque me, quoniam, tu ita vis, puto non invita Minerva esse facturum, quam quidem ego, si forto de tuis sumpsero, non solum Παλλάδα, sed etiam Ἀρτάδα nominabo.—*Ibid.*, iii, 1, 1.

4. Idcirco certis dimensum partibus orbem

Per duodena regit mundi Sol aureus astra.

Quinque tenent coelum zonas, quarum una corusco

Semper sole rubens et torrida semper ab igni;

Quam circum extremæ dextra laevaque trahuntur,

Cærules glaciæ concretæ atque imbribus atris;

Has inter medianque duæ mortalibus ægris

Munere concessæ divum, et viæ secta per ambas,

Obliquæ quæ se signorum verteret ordo.

Mundus ut ad Scythiam Rhipaenasque ardens arces

Consurgit, premitur Libyæ devexus in Anstros.

Hic vertex nobis semper sublimis; at illum

Sub pedibus Styx atra videt Manesque profundi.

Maximus hic flexu sinuoso clabitur Anguis

Circum perque duas in morem fluminis Arctos,

Arctos Oceani metuentes aequore tingui;

Illic, ut perhibent, aut intempesta silot nox,

Semper et obtenta densantur nocte tenebræ,

Aut redit a nobis Aurora diemque reducit,

Noxque ubi primus equis Oriens afflavit anhelis,

Illic sera rubens accendit lumina Vesper.

VIRG.—*Georg.*, i, 231-251.

(a.) Give the principal tenses of the following: *dimensum, concessæ, sectæ, consurgit, premitur, devexus, elabitur*.

(b.) Write in Latin the cardinal, ordinal, and distributive numerals, together with the numeral adverbs, from *one* to *ten*, inclusive.

(c.) Explain, in terms of the English Calendar, the expressions—
"Id distulit in ante diem XVI. Kalendas Novembres;" "ex ante diem iii Nonas Junias usque ad pridie Kalendas Septembres."

Appendix,
No. 2.
General
Class Ex-
amination.

Appendix,
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amination

Pass.

B. Translate into Latin prose :

But the events of the last year of the struggle plainly showed what the Romans would have to fear from a coalition of all the twelve cities. Two of the Roman generals were defeated; one was killed in the battle; and the panic spread to the lines before Veii, and even to Rome itself, where the rumour prevailed that the whole force of Etruria was on its march, that the camp before Veii was actually assailed by the enemy, and that his victorious bands might be expected at any moment to advance on Rome. So great was the alarm that the nations crowded to the temples to avert by prayers and sacrifices their country's peril, and the senate resolved to appoint a dictator.

Honor.

Translate into Latin prose :

In this embarrassing situation, he formed the chimerical scheme, not only of achieving great exploits by a deputy, but of securing to himself the glory of the conquests which were to be made by another. In the execution of this plan he fondly aimed at reconciling contradictions. He was solicitous to choose a commander of intrepid resolution, and of superior abilities, because he knew these to be requisite to ensure success; but, at the same time, from the jealousy natural to little minds, he wished this person to be of a spirit so tame and obsequious, as to be entirely dependent on his will. But when he came to apply these ideas in forming an opinion concerning the several officers who occurred to his thoughts as worthy of being intrusted with the command, he soon perceived that it was impossible to find such incompatible qualities united in one character. Such as were distinguished for courage and talents were too high-spirited to be passive instruments in his hands. Those who appeared more gentle and tractable, were destitute of capacity, and unequal to the charge. This augmented his perplexity and his fears.

Additional for Honors.

Translate :

1. At cantu comotæ Erebi de sedibus imis
 Umbrae ibant tennes simulacraque luce carentum,
 Quam multa in foliis avium se milia condunt,
 Vesper ubi aut hibernus agit de montibus imber,
 Matres atque viri, defunctaque corpora vita
 Magnanimum heroum, pueri innuptaeque puellae,
 Impositique regis iuvenes autem ora parentum;
 Quos circum limus niger et deformis arundo
 Coccyi tardaque palus inamabilis unda
 Alligat, et novies Styx interfusa coercet.
 Quin ipsae stupere domus atque intima Leti
 Tartara, caeruleosque implexae crinibus angues
 Eumenides, tenuitque inhiens tria Cerberus ora,
 Atque Ixionii vento rota constitit orbis.
 Iamque pedem referens casus evaserat omnes,
 Redditaque Eurydice superas veniebat ad auras,
 Ponere sequens, namque hanc dederat Proserpina legem,

Quam subita incautum dementia cepit amantem,
Ignoscenda quidem, scirent si ignoscere Manes :
Restitit, Eurydicenque suam, iam luce sub ipsa,
Inamemor, heu, victusque animi respexit. Ibi omnis
Effusus labor atque immitis rupta tyranni
Foedera, terque fragor stagnis auditus Avernia.

VIRG.—*Georg.*, iv. 471—493.

Explain accurately the expressions: *ipseas domus*; *implexas*—*angues*; *sento*—*constitit*; *victus animi*.

2. Agricolaë prisci, fortes parvoque beati,
Condita post frumenta levantes tempore festo
Corpus et ipsum animum spe finis dura ferentum,
Cum sociis operum, pueris et coniuge fida,
Tellurem porco, Silvanum lacte plabant,
Floribus et vino Genium memorem brevis aevi.
Fescennina per hunc inventa licentia morem
Versibus alternis opprobria rustica fudit,
Libertasque recurrentes accepta per annos
Lusit amabiliter, donec iam saevus apertam
In rabiem coepit verti locus et per honestas
Ire domos impune minax. Dolere cruento
Dente lacessiti, fuit intactis quoque cura
Condicione super communi, quin etiam lex
Poenaque lata, malo quae nollet carmine quemquam
Describi; vertere modum, formidine fustis
Ad bene dicendum delectandumque redacti.

HORACE—*Epist.* i, i, 139—155.

- (a.) Cite Horace's description of the *Genius*.
- (b.) Explain the allusions in (1) *Fescennina licentia*, and (2) *formidine fustis*.

3. Silvestres homines sacro interpretsque decorum
Caedibus et victu foedo deterruit Orpheus,
Dictas ob hoc lenire tigres rabidosque leonae.
Dictas et Amphion, Thebaeae conditor urbis,
Saxa movere sono testudinis et prece blanda
Ducere, qua vallet. Fuit haec sapientia quondam,
Publica privatis secerne, sacra profanis,
Concubita prohibere vago, dare iura maritis,
Oppida moliri, leges incidere ligno :
Sic honor et nomen divinis vatibus atque
Carminibus venit. Post hos insignis Homerus,
Tyrtaeusque mares animos in Martia bella
Versibus exauit; dictae per carmina sortes,
Et vitae monstrata via est, et gratia regum
Pieris tentata modis, ludasque repertus,
Et longorum operum finis :—ne forte pudori
Sit tibi Musa lyrae sollers et cantor Apollo.

Ad Pisones, 391—407.

Mark the several stages in the progress of poetry here described.
Give the original meaning of *sortes*, and explain its use in this passage.

Appendix,
No. 2.General
Class Ex-
amination.

4. Translate and explain the following :

- (a.) Frena Pelethronii Lapithæ gyrosque dedere
Impositi dorso, atque equitem docuere sub armis
Insultare solo, et gressus glomerare superbos.
- (b.) et inter
Dura jacet pernox instrato saxa cubili.
- (c.) Fluctus uti medio coepit cum albescere ponto
Longius, ex altoque sinum trahit ; utque volutus
Ad terras immane sonat per saxa, neque ipso
Monte minor procumbit.
- (d.) nec viscera quiaquam
Aut undis abolere potest, aut vincere flamma.
- (e.) Difficile est proprie communia dicere ; tuque
Rectius Iliacum carmen deducis in actus,
Quam si proferres ignota indictaque primus.
- (f.) Et talit eloquium insolitum facundia præceps,
Utiliumque sagax rerum et divina futuri
Sortilegis non discrepant sententia Delphis.
- (g.) Non ego inornata et dominantia nomina solum
Verbaque, Pisones, Satyrorum scriptor amabo.

5. Give the etymology of the following words :

Prorsus, pergo, ferme, saltem, secus, condicio, pollicor, olim, futulus, bimus indulgeo, scitus, virgultum, suffio, fimus, fumus.

THIRD YEAR STUDENTS.

Translate, adding brief notes where a word, a construction, or allusion seems to require it :

Tranio. Ego dicam : ausculta. ut foris cenauerat
Tuus gnatus, postquam rediit a cœna domum,
Abimus omnes cubitum, condormiuimus.
Lucernam forte oblitus fueram extinguere :
Atque ille exclamat de repente maximum.

Theoropides. Quis homo ? an meus gnatus ?

Tranio.

St, tace : ausculta modo.

Ait venisse illum in somnis ad se mortuom.

Theoropides. Nempe ergo in somnis ?

Tranio.

Ita : set ausculta modo.

Ait illum hoc pacto sibi dixisse mortuom.

Theoropides. In somnis !

Tranio.

Mirum, quin uigilanti diceret.

Qui abhinc sexaginta annis occisus foret.

Interdum inepto stultus es, [*Theoropides.*]

Theoropides. Taceo.

Tranio.

Set ecce, quas ille illi inquit [mortuos :]

‘Ego transmarinus hospes sum Diapontius.

Hic habito : dedita hæc mihi habitatio :

Nam me Acherantem recipere Orcus noluit,

Quia præmature uita careo. per fidem

Deceptas sum : hospes me hic necsunt, isque me

Defodit insepultum clam in hisce aedibus,

Scelestus, auri causa. nunc tu hinc smigra :

Scelestus haec aedes, impiast habitatio.'

Quae hic monstra sunt, anno uix possum sloqui.

Theoprides. St st.

Tranio. Quid obsecro hercle factumst ?

Theoprides. Concrepuit foris.

Tranio. Haecina percussast ? guttam haut habeo sanguinis ;
Vivom me accersaut Acheruntism mortui.

PLAUTUS—*Most.*, ii, 2, 53—77

2. Hic tamen et spura quos diximus inferiores
partibus egregie multis multoque minores,
quamquam multa bene ac divinitus inveniunt
ex adyto tamquam cordis responsa dederunt
sanctius et multo certa rationis magis quam
Pythia quae tripodi a Phoebi lauroque profatur,
principiis tamen in rerum fecere ruinas
et graviter magni magno cecidere ibi casu :
primum quod motus exempto rebus inani
constituunt, et res mollis rarasque relinquunt,
aera, solem, ignem, terras, animalia, fruges,
nec tam suavis admiscet in eorum corpus inane ;
deinde quod omnino finem non esse scindis
corporibus faciunt, neque pausam stare fragori,
nec prorsum in rebus minimum consistere quicquam ;
cum videamus id extremum cuiusque cacumen
esse quod ad sensus nostros minimum esse videtur,
conicere ut possis ex hoc, quae cernere non quis
extremum quod habent, minimum consistere in illis.
huc accedit uti, quoniam primordia rerum
mollia constituunt, quae nos navita videmus
esse et mortali cum corpore funditus, atque
debeat ad ultimum iam rerum summa revelli
de niloque reuata vigescere copia rerum ;
quorum utrumque quid a vero iam distet habebis
deinde inimica mollia multis sunt atque veneno
ipsa sibi inter se : quare aut congressa peribunt,
aut ita diffugient ut tempestatis coacta
fulmina diffugere atque imbris ventosque videmus.

Lucret., i, 734—762.

3. Illud in his quoque te rebus cognoscere avemus,
corpora cum deorsum rectam per inane feruntur,
ponderibus propriis incerto tempore ferias
incertisque loci spatiis decellere paulum,
tantum quod momentum mutatum dicere possis
quod nisi declinare solerent, omina deorsum,
Imbris uti guttae caderent per inane profundum,
nec foret offensus natus nec plaga creata
principiis : ita nil unquam natura creasset.

Ibid., ii, 216—224.

4. Give Cicero's expression for *tantum, quod momentum mutatum d. p.*
Explain accurately the nature of the *minimum* in the constitution of the
atom, and point out its analogy to the *minimum* in the declination.
Explain the argument in *cum videamus id extremum—consistere in illis*.
The motives which suggested to Epicurus his doctrine of the declination

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of atoms is instructive as to the point of view from which he regarded physical enquiries. Cite the expression in Lucretius which comes nearest the Greek *ἀτομολ*.

5. Translate and explain the following :

- (a.) Aeternas quoniam poenas in morte timendum est.
 - (b.) hoc tibi de plano possum promittere, Memmi,
 - (c.) Corpus enim per se communis dedicat esse census.
 - (d.) nam quaecunque cluent, aut his conjuncta duabus rebus ea in-venies, aut horum eventa videbis.
 - (e.) quoniam, nec plenum naviter extat
neo poro vacuum.
 - (f.) dumtaxat rerum magnarum parva potest res
exemplare dare et vestigia notitiae.
 - (g.) abi, dierecte, apscede ab janua.
 - (h.) Quid tibi, malum, me, aut quid ego agam, curatior ?
 - (i.) sine me aliatum fungi fortunas meas.
 - (k.) nova pictura interpolare vis epus lepidissimum ?
 - (l.) soli gerundum censeo morem et capitandas crines.
 - (m.) Sed quid hoc ? oclusa januaat interdus.
 - (n.) Ferocem facis, quia te erus tuos amat.
- (What emendation has been proposed, and why ?)

Translate, adding brief notes where you think it necessary :

1. Vixdum regresso in Capitolium Martiale furens miles aderat, nullo duce, sibi quisque auctor. cito agmine forum et imminencia foro templa praeterverti erigunt aciem per adversum collem usque ad primas Capitolinae arcis fores. erant antiquitas porticus in latere clivi dextrae subeuntibus, in quarum tectum egressi anxii tegulisque Vitellianos obreabant. neque illis manus nisi gladiis armatae; et accessere tormenta aut missilia tela longum videbatur; faces in prominentem porticum iecere. et sequebantur ignem ambustasque Capitolii fores penetrassent, ni Sabinus revolsas undique statuas, decora mariorum, in ipso aditu vice muri obieisset. tunc diversos Capitolii aditus invadunt iuxta locum asyli et qua Tarpeia rupes centum gradibus aditur. improvisa utraque vis; propior atque acrior per asyllum ingruerat. nec sisti poterant scandenti per conjuncta aedificia, quae, ut in multa pace, in altum edita solum Capitolii aequabant. hic ambigitur, ignem tectis abpugnatores iniecerint, an obsessi, quae crebrier fama, ita nitentes ac progressos depulerint. inde lapsus ignis in porticus adpositas aedibus; mox sustinentes fastigium aquilae vetere ligno traxerunt flammam alueruntque. sic Capitolium clausis foribus indefensum et indireptum conflagravit.—TACITUS—*Hist.*, iii., 71.

2. Neminem volberunt maiores nostri non modo de existimatione cuiusquam, sed ne pecuniaria quidem de re minima esse iudicem, nisi qui inter adversarios convenisset. Quapropter in omnibus legibus, quibus exceptum est, de quibus causis aut magistratum capere non liceat aut iudicem legi aut alterum accusare, haec ignominiae causa praetermissa est. Timoris enim causam, non vitae poenam in illa potestate

esse voluerunt. Itaque non solum illud ostendam, quod iam videtis, populi Romani suffragiis saepenumero censorias subscriptiones esse sublatas, verum etiam iudiciis eorum, qui iurati statuere maiore cum religione et diligentia debuerunt. Primum iudices, senatores equitosque Romani in compluribus iam reis, quos contra leges pecunias acceperant subscriptum est, suae potius religioni quam censorum opinioni paruerunt. Deinde praetores urbani, qui iurati debent optimum quemque in selectos iudices referre, nunquam sibi ad eam rem censoriam ignominiam impedimento esse oportere duxerunt. Censores denique ipsi saepenumero superiorum censorum iudiciis, si ista iudicia appellare vultis, non steterunt. Atque etiam ipsi inter se censores sua iudicia tanti esse arbitrantur, ut alter alterius iudicium non modo reprehendat, sed etiam rescindat: ut alter de senatu movere velit, alter retineat et ordine amplissimo dignum existimet: ut alter in aerario referri aut tribu moveri iubeat, alter vetet. Qua re qui vobis in mentem venit haec appellare iudicia, quae a populo rescindi, ab iuratis iudicibus repudiari, a magistratibus negligi, ab iis qui eandem potestatem adepti sunt commutari, inter collegas discrepare videtis?—CICERO—*pro Cluentio*, xlii., 120—132.

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3. Notice any peculiarities you have observed in the Latin of Tacitus. Give a brief analysis of the "pro Cluentio."

4. Translate into Latin prose:

I congratulate you, sir, on the recovery of your wonted style though it has cost you a fortnight. I compassionate your labour in the composition of your letters, and will communicate to you the secret of my fluency. Truth needs no ornament; and in my opinion what she borrows from the pencil is deformity. You brought a positive charge against me of corruption. I denied the charge and called for proof. You replied with abuse, and reasserted your charge. I called again for proofs. The third time you reply with abuse only, and drop your accusation. In your fortnight's letter I find not a word about my corruption. I have no more to say but to thank you for your condescension, and a grateful public and honest ministry for their many favours conferred upon me. The last, I am sure, will never refuse me any grace I shall solicit; and as for you, since you have not been ashamed to confess that you told a deliberate lie in my favour, and as a charitable donation, why may I not hope that you will hereafter make the same acknowledgment with regard to what you have said to my prejudice.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FIRST YEAR STUDENTS.

FRENCH.

Translate into French:

I. France is separated from Italy by the Alps, and from Spain by the Pyrenees. The gentleman and lady are gone. He is an Englishman. Have you read Milton's *Paradise Lost*? The great wall, on the north of China, is about twelve hundred miles long. She is taller than her sister by the whole head. The more you study the more you will learn. Listen to me; do not condemn me without a hearing. You will cut your finger. This gentleman is a relation of mine. Is this house yours or his? What is true is beautiful. The lady whom he has married is

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my cousin. Have you received the letter I wrote to you? Such was his advice. I shall not fail to do what you wish. We have not communicated it to him. I do not think you will come. He will wait till you are ready. These men, foreseeing the danger, put themselves on their guard.

II. Are we in Ireland? Yes, we are. Have you any French books? No, we have not. Can you read and write German? No, I can neither read nor write it. Is your son-in-law in good health? He has been ailing these three months. Are you going to the railway station? I shall accompany you as far as the bridge. Who is reading? I am. Whom have you accused? Them. Will you write to me? I will write to you and to your brother. Has he acknowledged his error? On the contrary he maintains that he is right. At what o'clock will he be here? He will not come before two o'clock. Where is Mary's silk dress? It is in the press.

III. Upon the death of my father, I was resolved to travel into foreign countries, and therefore left the university with the character of an odd, unaccountable fellow, that had a great deal of learning, if I would but show it. An insatiable thirst after knowledge carried me into all the countries of Europe, in which there was anything new or strange to be seen. Nay, to such a degree was my curiosity raised, that having read the controversies of great men concerning the antiquities of Egypt, I made a voyage to Grand Cairo, on purpose to take the measure of a pyramid; and as soon as I had set myself right in that particular, returned to my native country with great satisfaction.

(For Pass Men only.)

Translate into English :

Il ne faut pas, comme on l'a fait trop souvent, s'exagérer l'influence des lieux sur la poésie, et vouloir retrouver à toute force le caractère d'un poète dans le caractère du pays qui l'a vu naître. La nature humaine a en elle de quoi résister à l'action des objets extérieurs, et les circonstances sociales et politiques exercent plus d'empire sur les âmes que la transparence de l'air ou les lignes du paysage. Mais on ne doit pas oublier que l'existence politique des Etats de la Grèce a dépendu elle-même, en grande partie, de la configuration du sol et de la nature du pays. Quand on a vu la Grèce, on comprend mieux les différences de génie, de mœurs, de constitution, de langage, qui séparaient, dans l'antiquité, les différentes fractions du peuple hellénique. Nulle part, peut-être, le voyageur ne passe plus brusquement d'un climat à un autre climat, et pour ainsi dire d'une saison à une autre saison; à quelques milles de distances, l'époque de la moisson varie considérablement.—J. J. AMPÈRE.

GERMAN.

I. Translate into German :

The boys have bathed in the river. A stranger wishes to speak to you. He is more rich than powerful. We shall expect you next week. We went in. I have spent much money. Will you lend me your grammar; I have lost mine. You must write more distinctly. We shall remain in town as long as the bad weather continues. I hope to be able to pay the account within six months. It is half-past five. It wants ten minutes to six. The town has been bombarded. He lives at peace with all men. The merchant would not have failed, if he had been more cautious. Our rich neighbour has a numerous family. The best man is not without

faults. This is a lion, and that is a lioness. Of what are you talking? Advise me which book I am to read. The gentleman, with whom you saw me to day, is a friend of my father's. He rises early. We see each other very seldom. I shall take a walk with a friend.

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II. Translate into English:

Die Bracht meines Festes und mein Benehmen dabei erhielten anfangs die stark-
glühigen Glimmer der Stadt bei ihrer vorgesezten Meinung. Es ergab sich schließlich
sehr bald aus den Zeitungen, daß die ganze fabelhafte Reise des Königs von Preußen ein
bloßes ungegründetes Gerücht gewesen. Ein König war ich aber nun einmal, und
musste schließlich ein König bleiben, und zwar einer der reichsten und königlichsten,
die es immer geben mag. Nur mußte man nicht recht, welcher. Die Welt hat nie
etwas gehabt, über Mangel an Monarchen zu klagen, am wenigsten in unsern Tagen;
die guten Leute, die noch keinen mit Klagen gesehen, riefen mit gleichem Blick bald auf
diesen, bald auf jenen—Graf Peter blieb immer, der er war.—CHAMISSO.

SECOND YEAR STUDENTS.

FRENCH.

Translate into French:

I. To white-wash an Ethiopian is a proverbially hopeless task. We have had judges without law and diplomatists without French. They outwitted the stars. What the extent of his legal attainments may have been it is difficult to say. That England and Holland had a right to interfere is plain. It is needless to relate how dexterously, how resolutely, how gloriously he directed the politics of England. They drove him into an unjustifiable war against his will. He talked himself hoarse.

II. Though we seem grieved at the shortness of life in general, we are wishing every period of it at an end. The minor longs to be at age, then to be a man of business, then to make up an estate, then to arrive at honours, then to retire. Thus, although the whole life is allowed by everyone to be short, the several divisions of it appear long and tedious. We are for lengthening our span in general, but would fain contract the parts of which it is composed. The usurer would be very well satisfied to have all the time annihilated that lies between the present moment and next quarter-day. The lover would be glad to strike out of his existence all the moments that are to pass away before the happy meeting.—ADDISON.

III. In populous cities, which are the seat of commerce and manufactures, the middle ranks of inhabitants, who derive their substance from the dexterity or labour of their hands, are commonly the most useful and the most respectable part of the community. But the plebeians of Rome, who disdained such servile and sedentary arts, had been oppressed, from the earliest times, by the weight of debt and usury; and the husbandman, during the term of his military service, was obliged to abandon the cultivation of his farm. The lands of Italy, which had been originally divided among the families of free and indigent proprietors, were insensibly purchased, or usurped by the avarice of the nobles; and in the age which preceded the fall of the Republic, it was computed that only two thousand citizens were possessed of any independent substance.—GIBBON.

IV. (a.) Explain the origin of the double forms: *me, moi*; *te, toi*; *se, soi*.

(b.) From what parts of speech are verbs of recent formation derived, and what conjugations do they follow respectively?

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(c.) Mention some substantives which have changed their gender since the seventeenth century.

(d.) Give an historical account of the distinction made gradually between the participle present and the verbal adjective.

(e.) What were the successive changes of Latin adjectives of two terminations after their passage into the French language?

GERMAN.

Translate into German :

I. Though a man possessed all earthly goods, wealth alone could not make him happy. He is too conscious of his own strength to avoid difficulties. Some waggons conveying provisions have unfortunately fallen into the hands of the enemy. This is a circumstance which deserves to be noticed. He acts as if he were out of his senses. My physician has advised me to keep the room, on that account I must defer my visit till next week. A row of trees shades the way along the brook.

II. Early in the year 1740, Frederic William met death with a firmness and dignity worthy of a better and wiser man; and Frederic, who had just completed his twenty-sixth year, became king of Prussia.

His character was little understood. That he had good abilities, indeed no person who had talked with him, or corresponded with him, could doubt. But the easy Epicurean life which he had led, his love of good cookery and good wine, of music, of conversation, of light literature, led many to regard him as an intellectual voluptuary. His habit of canting about moderation, peace, liberty, and the happiness which a good mind derives from the happiness of others, had imposed on some who should have known better. Nobody had the least suspicion that a tyrant of extraordinary military and political talents, of industry more extraordinary still, without fear, without faith, and without mercy, had ascended the throne—MACAULAY.

THIRD YEAR STUDENTS.

FRENCH.

Translate into French :

No unbiassed observer, who derives pleasure from the welfare of his species, can fail to consider the long and uninterruptedly increasing prosperity of England as the most beautiful phenomenon in the history of mankind. Climates more propitious may impart more largely the mere enjoyments of existence; but in no other region have the benefits that political institutions can confer been diffused over so extended a population; nor have any people so well reconciled the discordant elements of wealth, order and liberty. These advantages are surely not owing to the soil of this island, nor to the latitude in which it is placed; but to the spirit of its laws, from which, through various means, the characteristic independence and industriousness of our nation have been derived. The constitution, therefore, of England must be to inquisitive men of all countries, far more to ourselves, an object of superior interest.—HALLAM.

1. Explain the cause of Lamartine's popularity.
2. Give an account of Volney.
3. What causes concurred to give a prominent place to literary men under the Restoration?
4. Contrast the literature of the nineteenth century with that of the seventeenth.

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Translate into German :

Henry then bent his march northwards to Calais ; but he was still exposed to great and imminent danger from the enemy, who had also passed the Somme, and threw themselves full in his way, with a purpose of intercepting his retreat. After he had passed the small river of Ternois at Blangi, he was surprised to observe from the heights the whole French army drawn up in the plains of Agincourt, and so posted, that it was impossible for him to proceed on his march without coming to an engagement. Nothing in appearance could be more unequal than the battle, upon which his safety and all his fortunes now depended. The English army was little more than half the number which had disembarked at Harfleur, and they laboured under every discouragement and necessity. The enemy was four times more numerous ; and headed by the Dauphin and all the princes of the blood ; and was plentifully supplied with provisions of every kind. Henry's situation was similar to that of Edward at Cressy, and that of the Black Prince at Poitiers, and the memory of these great events, inspiring the English with courage, made them hope for a like deliverance from their present difficulties.—HUME.

1. Give a brief account of the state of literature in Germany before Klopstock.
2. What was the influence of Voltaire and Rousseau respectively on German literature ?
3. Who were the most prominent leaders of " das junge Deutschland " and what were their aims ?

ITALIAN.

Complete the following verses of Dante and comment thereon :

1. Lasciate ogni speranza
2. Noi leggevamo un giorno . . .
3. Godi, Fiorenza,
4. I' fui uom d'arme, e poi . . .
5. Poesia, più ch'ol' dolor
6. E quindi uscimmo a
7. Io mi volsi a man destra, e posi mente
All' altro pol, e
8. Amor che nolla mente
9. Ricorditi di me, che

Translate into Italian :

The Venetian nobles distrusted their own subjects, and were afraid of allowing them the use of arms. They encouraged among them arts of industry and commerce, they employed them in manufactures and in navigation ; but never admitted them into the troops which the state kept in its pay. The military force of the republic consisted entirely of foreign mercenaries.—ROBERTSON.

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FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ALGEBRA.

1. Prove algebraically that if $\frac{x}{y} = \frac{a}{b} \frac{x^2 - y^2}{x^2 + y^2} = \frac{a^2 - b^2}{a^2 + b^2}$.

2. Given—

$$\begin{aligned} x + y &= \frac{7}{3} \\ \frac{1}{x} + \frac{1}{y} &= \frac{7}{2} \end{aligned} \quad ; \text{ find } x \text{ and } y.$$

3. Solve the equations—

$$(a) \quad x - \frac{1}{3} - \frac{x - \frac{1}{4}}{x - \frac{1}{2}} = \frac{5}{24}.$$

$$(\beta) \quad \sqrt{x-7} + \sqrt{x-12} = \sqrt{2x-7}.$$

4. Find by the solution of a quadratic equation the point on the produced side of a square, such that its distances from the opposite vertices bear to one another the ratio of $\sqrt{2}$ to 1.

5. Granting that the logarithm of the product of two numbers is the sum of their logarithms and that $\log(10) = 1$; prove that—

$$\log\left(\frac{x}{y}\right) = \log x - \log y.$$

$$\log(1) = 0.$$

And that the logarithm of a certain sequence of figures has the same mantissa wherever be the decimal point.

6. Express $\sqrt{7-40i}$ in the form $\sqrt{a} - \sqrt{b}i$.

7. Show that if $x+y$ be given, $x^p y^q$ is greatest when $\frac{x}{p} = \frac{y}{q}$, where x, y, p, q are all supposed positive.

8. If $\frac{p}{q}, \frac{p'}{q'}$ are two consecutive convergents to a continued fraction, prove that $p'q - pq' = \pm 1$, and that the error induced by stopping at the convergent $\frac{p}{q}$ is less than $\frac{1}{qq'}$.

Express $\sqrt{11}$ as a continued fraction and calculate the first four convergents.

9. Assuming the series for e^x expand $\log(1+x)$ in powers of x .

$$\begin{aligned} \text{Given—} \quad \log_e(2) &= .69314 \\ \log_e(3) &= 1.09861 \end{aligned}$$

Calculate $\log_e(17)$ to five places of decimals.

10. Eliminate x between the two equations—

$$ax^3 + ax^2 + ax + a_1 = 0; \quad bx^3 + bx^2 + bx + b_1 = 0.$$

Show, *a priori*, that the sum of the suffixes in each term of the result will be 9.

11. Discuss the convergency of the following series:—

$$1 + \frac{x}{1} + \frac{x}{1.2} + \frac{x^2}{1.2} + \dots \quad x < 1.$$

$$\frac{x}{1-x} + \frac{x^2}{1-x^2} + \frac{x^3}{1-x^3} \quad x < 1.$$

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CONIC SECTIONS.

1. Investigate the general form of the locus of a point such that its distance from a given point bears a constant ratio to its distance from a given line, according as this ratio is less than equal to a greater than unity.

2. A circle, constantly passing through the intersection of two given lines and also through another fixed point, meets these lines in the points X and Y; find envelope of the chord XY.

3. Prove that in a parabola the square of the ordinate varies as the abscissa.

4. The normal at a point P on an ellipse meets the minor axis in g and from g a perpendicular gk is let fall on the focal radius vector; prove that Pk=semi axis major.

5. The foot of the perpendicular let fall from the focus of any tangent to an hyperbola lies on the auxiliary circle.

6. The focal chord of curvature at any point of a conic is equal to the focal chord of the conic parallel to the tangent at that point.

7. A chord PQ is drawn at right angles to the axis of an ellipse of which S and H are the foci; find the locus of the intersection of SP and HQ.

8. A sphere is laid anywhere on a table; prove that the minor axis of the elliptic shadow is constant, the source of light being a luminous point above the table.

GEOMETRY AND TRIGONOMETRY.

1. In an obtuse-angled triangle the square of the side opposite the obtuse angle is equal to the squares of the sides containing that angle, together with twice the rectangle contained by either of these sides, and its continuation to meet a perpendicular let fall upon it from the opposite angle.

2. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

3. Inscribe a regular pentagon in a given circle.

4. Find a mean proportional between two given right lines. Show that the square described on the line so found is a mean proportional between the squares described on the given lines.

5. Prove the relations—

$$\sec^2 A = 1 + \tan^2 A; \quad \sin 2A = 2 \sin A \cos A.$$

6. Assuming the formulæ for sines and cosines of sums and differences, prove that—

$$\sin A - \sin B = 2 \sin \frac{1}{2}(A - B) \cos \frac{1}{2}(A + B).$$

7. Prove the formulæ—

$$\cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}} \quad \tan \frac{1}{2}(A - B) = \cot \frac{1}{2} C \frac{a-b}{a+b}.$$

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8. Given the angles that the sides of a known triangle subtend to an observer in the same plane, how would you compute his distance from each vertex?

9. If two triangles are so placed that the lines joining corresponding vertices pass through a common point the intersections of corresponding sides lie in a right line.

10. Prove that the inverse of a circle is another circle, and that any two curves cut at the same angle as the inverse curves.

11. Two fixed points A and B are taken on a radius of a circle on the same side of the centre, such that the rectangle under their distances from the centre is equal to the square of the radius. A variable chord PQ is drawn across the circle at right angles to this line; find the locus of the intersection of AP and BQ.

12. If two straight lines be cut by parallel planes they are divided in the same ratio.

13. The volume of a pyramid is one-third of that of a prism standing on same base and having the same altitude.

14. Prove the expression for the radius of the circle circumscribing a quadrilateral in terms of the sides—

$$R = \frac{1}{4} \sqrt{\frac{(ab+cd)(ac+bd)(ad+bc)}{(s-a)(s-b)(s-c)(s-d)}},$$

where s = semi-sum of the sides.

15. Three lines constantly revolve with the same angular velocity round three fixed points. Show

(1.) that in one position of the system the three lines pass through a common point.

(2.) that in the position at right angles to this the area of the triangle they form is a maximum.

(3.) In general the area varies as the cosine of the angle the sides make with the position corresponding to the maximum.

SECOND YEAR STUDENTS.

CO-ORDINATE GEOMETRY.

1. The co-ordinates of the vertices of a triangle are (1, 3), (2, -3), (-2, -1); find the equations of the perpendiculars let fall from the vertices on the sides.

2. Find the co-ordinates of the points of intersection of the line $x \cos \alpha + y \sin \alpha = p$ with the circle $x^2 + y^2 = 2ax$, and the relation which must subsist between p and a in order that the line should touch the circle.

3. Given base of a triangle and difference of base angles, find locus of vertex.

4. Investigate the equation of the tangent—

(1.) To the parabola $y^2 = px$ at the extremity of the parameter.

(2.) To the curve $c^2xy = a^2x'y - b^2y'x$ at the point $x'y'$.

5. Find the polar equation of the ellipse the focus being taken as pole. Prove that the sum of the reciprocals of two rectangular focal chords is constant.

6. A chord PQ is drawn at right angles to the axis of an ellipse; find the locus of the intersection of SP and HQ where S and H are the foci.

7. Prove that the co-ordinates of the centre of a conic, given by the general equation, are determined by the equations—

$$ax + hy + g = 0, \quad by + hx + f = 0.$$

Find the locus of the centre of a conic passing through four given points on the axes of co-ordinates.

8. The two diagonals of a quadrilateral inscribed in a conic intersect in a fixed point on the axis and one of the sides passes through a second fixed point on the axis prove that the opposite side passes through a third fixed point on same.

9. Show how to find the sums of the powers of the roots of an equation in terms of the co-efficients.

10. The equation $x^3 - 3x^2 - x - 9 = 0$ has a root lying between 3 and 4; calculate it.

DIFFERENTIAL AND INTEGRAL CALCULUS.

1. Explain accurately what is meant by $\frac{du}{dx}$, and investigate what it denotes—

- (1.) Where u is the ordinate of a curve and x the abscissa.
- (2.) Where u is the volume of a surface of revolution cut off by a section perpendicular to the axis and x the portion of the axis intercepted.
- (3.) Where u is the distance passed over by a moving point and x the time.

2. Differentiate the following expressions:—

$$\frac{x}{\sqrt{1-x^2}}; \quad \frac{x \sin^{-1}x}{\sqrt{1-x^2}} + \log(1-x^2); \quad e^{ax} \sin vx.$$

3. Prove that $\frac{x+1}{\sqrt{x^2+1}}$ is a maximum when $x=1$.

4. Find an expression for the interval between the foot of the perpendicular on a tangent to the ellipse, $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, and the point of contact, and show that when this interval is greatest the co-ordinates of the point of contact are $\frac{a\sqrt{b}}{\sqrt{a+b}}$ and $\frac{b\sqrt{a}}{\sqrt{a+b}}$. Show that at this point the

radius of curvature is equal to the perpendicular on the tangent.

5. Expand $\sec x$ to the fourth power of x by Maclaurin's theorem.

6. Prove the expressions for the radius of curvature—

- (1.) in terms of x and y
- (2.) in terms of u and θ .

u being the reciprocal of the radius vector.

7. Show how to find the envelope of a curve containing an arbitrary parameter. Ex. From a fixed point O a variable line OP is drawn to meet a circle; find the envelope of a line PQ drawn at right angles to OP .

8. Find the equation of the tangent to the curve $\frac{x^m}{a^m} + \frac{y^m}{b^m} = 1$, also that of the locus of the foot of the perpendicular from the origin on the tangent.

9. Require $\int \sqrt{a^2 - x^2} dx; \quad \int \frac{dx}{1 + \sqrt{x}}; \quad \int x \log x. dx.$

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amination.

10. Apply the integral calculus to find—
- (1.) the arc of a parabola
 - (2.) the volume of a sphere
 - (3.) the surface of a prolate spheroid.

NATURAL PHILOSOPHY.—*Examiner, Professor Everett.*

SECOND YEAR STUDENTS.

EXPERIMENTAL PHYSICS.

1. What is the physical difference between the red light and the violet light of the spectrum; and what is the physical difference between polarized light and common light? Mention one way of recognising polarized light.
2. Describe the experiment of manometric flames, as employed for comparing the vibrations of a note and its octavo.
3. What are the differences between the overtones of an open and of a stopped pipe?
4. Two Leyden jars are of the same shape, their thicknesses being proportional to their other dimensions; are of the same kind of glass, and are similarly coated. Compare their capacities.
5. Given a glass rod, a stick of vulcanite, a silk handkerchief, a piece of flannel, and an insulated conductor; how would you proceed to give the latter a negative charge *by induction*?
6. It is desired to send the strongest possible current through a short thick piece of copper wire, by means of 10 zinc-copper cells. What arrangement of the cells should be employed, and what is the general rule?
7. A vessel is one-tenth filled with water at 100°C , the other nine-tenths being filled with steam. How much water at 0°C . must be injected at atmospheric pressure, to reduce the whole to water at 90° , the latent heat of steam being 537, and the density of steam at 100° being $\frac{1}{1700}$ of that of water?
8. What is the peculiar property which distinguishes the "critical temperature" of a condensable gas?
9. What is the "law of diameters" in capillary action; and how does it follow as a consequence from the general principles of capillarity?
10. Describe an experiment proving that the real foci of a convex lens are conjugate, that is to say, that each is the focus for rays coming from the other. In what sense does the same principle hold good when one focus is virtual?
11. In Attwood's machine, when the weights are allowed to move with uniform acceleration; if they travel over 12 inches in the first two seconds, how far will they travel in the first three seconds, and what will be their velocity at the end of the third second?

MATHEMATICAL PHYSICS.

Senior Division.

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amination.

[No credit will be given for numerical answers unaccompanied by work. The books are not, under any circumstances, to be mutilated. The left-hand pages are for rough work.]

1. Show that a balance which remains horizontal when both pans are empty, may be false, and that one which remains horizontal when the pans are each loaded with 10 lbs. may be false; but that one which remains horizontal under both these conditions must be true.

2. Show that in the common steelyard the graduations must be equidistant, and that their zero is the point at which the movable weight must be hung to keep the arms horizontal.

3. The height of an inclined plane is 5 feet, and the length 10 feet. In what time will a heavy body slide down it—

(1.) If there be no friction:

(2.) If the co-efficient of friction is 0.2?

4. A conical pendulum, consisting of a thin string with a bullet at its lower end, makes two revolutions per second. Compute its length, if the string makes an angle of 30° with the vertical.

5. A block of wood, falling vertically, is struck by a cannon ball, moving at the rate of 1,500 feet per second, which penetrates it and remains embedded in it. If the weight of the block is 10 times that of the ball, and the direction of motion immediately after impact makes an angle of 45° with the horizon, how far had the block fallen before it was struck?

6. The cornea of the eye is a meniscus lens whose convex and concave sides have each a radius of curvature of 8 millimetres; and the index of refraction of the aqueous humour, which separates the cornea from the crystalline, is $\frac{103}{77}$. Find the point to which rays originally parallel converge in traversing the aqueous humour.

7. Describe the Galilean telescope, and show that its magnifying power is approximately the ratio of two focal lengths.

8. What is a caustic surface, and what is its relation to the direction in which the image of a luminous point is seen, by oblique reflection or refraction?

9. Find the specific gravity of each of the following mixtures:—

(1.) A cubic foot of sand and three cubic feet of sawdust,

(2.) A pound of sand and three pounds of sawdust,

the specific gravity of sand being 2, and of sawdust 0.3.

10. Indicate a geometrical construction for the centre of pressure of any plane surface immersed in a liquid.

11. Distinguish between a mean solar day, an apparent solar day, and a sidereal day; and explain briefly the causes of the equation of time.

Junior Division.

1. Prove the parallelogram of forces, as regards direction, for two equal forces.

2. Two forces of 5 and 6 act at an angle whose cosine is $\frac{1}{3}$. Find their resultant.

3. A uniform lever, weighing 10 lbs., and 10 feet long, is balanced

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horizontally on a fulcrum, by a weight of 100 lbs. hung at one end, which is 1 foot 6 inches from the fulcrum, and by another weight just sufficient for equilibrium, at the other end. Find the pressure on the fulcrum.

4. A mass of iron, weighing 100 lbs., rests on a horizontal surface, and is drawn along with constant velocity by a force of 20 lbs. acting at an inclination of 45° to the horizon. Find the co-efficient of friction.

5. A triangular plate, whose weight may be neglected, and whose angles are $A=30^\circ$, $B=90^\circ$, $C=60^\circ$, has weights of 1, 2, 3 suspended at A, B, C respectively. Show that it will balance about the middle point of the bisector of the angle C.

6. A ray very nearly parallel to the surface of a medium is refracted into it at an angle of 45° with the normal. Find the index of refraction.

7. A disk, an inch in diameter, is placed at a distance of 100 inches in front of a concave mirror whose radiance of curvature is 10 inches. Find the position and size of the image.

8. A circular piece of board, weighing 1 lb., and of sp. gr. 0.4, is to be half immersed in water, by means of an iron weight attached to its lower edge. What must be the weight of the iron, its sp. gr. being 7?

9. Describe a method of determining the latitude of a place by observation.

THIRD YEAR STUDENTS.

MATHEMATICAL PHYSICS.

Honor Class.

1. Lines OA_1, OA_2, \dots , drawn in various directions in space, represent forces acting at O. Show that, if equal masses are placed at A_1, A_2, \dots , the line joining O to their centre of gravity coincides with the direction of the resultant of the forces; and compare its length with that of the line which represents the resultant.

2. A cube is acted on by four forces. One force is in a diagonal, and the others in edges no two of which are in the same plane, and which do not meet the diagonal. Find the condition that the system may be equivalent to a single force.

3. Prove that the resultant attraction of a thin uniform spherical shell upon an external point, is the same as if its mass were collected at the centre.

4. Prove that the integral of normal attraction over a closed surface depends only on the quantity of matter enclosed within the surface.

5. Prove that, for the law of the direct distance, the attraction of any solid is the same as if it were collected at one point.

6. Define "the potential, at a given point, due to a given mass."

7. A heavy hemisphere rests with its convex surface on a rough inclined plane. Find the greatest possible inclination of the plane.

8. Investigate the expressions for the accelerations along and perpendicular to the radius vector.

9. Prove the formula, for central forces—

$$P = \frac{h^2}{2} \frac{d}{dr} \frac{1}{p^3}$$

and apply it to motion in a circle, about a centre of force in the circumference.

10. Investigate the equation to the envelope of all the parabolas corresponding to a given velocity of projection from a given point.

11. Give Newton's proof that the force in different points of an orbit varies inversely as $\frac{SP^3}{QR}$; and apply it to find the law of force in an equiangular spiral.

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amination.

NATURAL PHILOSOPHY APPLIED.

Pass Paper.

- Find the condition of equilibrium for two forces acting perpendicularly on the arms of a lever which turns about an axle; the friction of the axle and the weight of the lever being taken into account.
- If two wheels of 18 and 30 teeth respectively work together in continuous rotation, how many different teeth of the larger wheel come into contact with one selected tooth of the smaller?
- Distinguish between spur wheels, bevel wheels, and skew-bevel wheels, and indicate the forms of their pitch-surfaces.
- How is the "instantaneous centre" found when the directions of motion of two points are given?
- Determine the angular velocity-ratio of two arms, turning about fixed centres in one plane, and connected by a link.
- Indicate the method of computing the stability or instability of a wall supported by buttresses, and sustaining a uniform pressure, in a direction inclined to the horizon, at its summit.
- Show how to compute the tension in the tie-beams of a simple isosceles roof.
- Prove that the work done in raising a number of masses through different heights, is the product of the sum of the masses by the height through which their c. g. is raised.
- A cubical block of granite, measuring a yard each way, rests upon a plank, supported by cross-bars 10 feet apart and distant respectively 2 feet and 5 feet from the edges of the block. Find the pressures on the cross-bars due to the weight of the granite, the sp. gr. of granite being 2.7.
- The diameter of the piston of an engine is 80 inches, the mean pressure of the steam is 12 lbs. per sq. in., the length of the stroke is 10 feet, the number of strokes per minute is 11. How many cubic feet of water will it raise per minute from a depth of 250 fathoms, its modulus being 0.6?
- Draw a sketch of Watt's parallel motion.

COATES' PRIZE.

NATURAL PHILOSOPHY APPLIED.

- Investigate the angular velocity-ratio of two pieces working together in the same plane, with sliding contact, about fixed centres.
- Show that the forms of two teeth which work correctly together, must be such as would be traced by the same tracing point, in the circumference of the same rolling curve, rolling on the same side of the two pitch surfaces.
- A rack drives a pinion whose teeth are cylindric pins. Determine the form of the rack-teeth when the diameter of the pins is neglected, and show how the form is modified when this diameter is taken into account.
- Determine the position in which the end of the crank has the same velocity as the piston rod; and show whether this is the position corre-

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sponding to the fastest motion of the piston rod, if the velocity of the crank is uniform.

5. A ladder rests against a vertical wall, with its feet on level ground. Find the condition that it shall just be sustained by friction.

6. Prove that the volume of a prism or cylinder whose ends are oblique, is the product of a right section by the length of a line drawn through the c. g. of a right section and terminated by the ends.

7. Explain by a diagram the sense in which the term "line of resistance" is employed with reference to a structure composed of horizontal courses.

8. Prove that two direct stresses $+T$ and $-T$ at right angles to each other are equivalent to a shearing stress T ; and that two linear extensions $+e$ and $-e$ at right angles to each other, are equivalent to a shear $2e$.

9. Indicate the mode of computing the lowering of the freezing point of water by pressure.

10. Investigate the equation of the line assumed by a uniform chain hanging freely between two fixed points; and show that the tension increases uniformly with the height.

11. What is the "absolute" unit of work, when the pound, foot, and second, are the units of mass, length, and time.

12. Explain the principle of Morin's integrating dynamometer.

CHEMISTRY.—*Examiner, T. Cranston Charles, M.D.*

Honor.

1. Calculate the specific heat of iron from the following data:—

Weight of iron—100 grams

" of ice melted—14.35 grams

initial temp. of iron—100° C.

2. The specific heat of a gas under constant pressure is different from that at constant volume: explain the cause of this difference on the dynamical theory of heat; and by the same theory account for heat disappearing or becoming latent in change of state.

3. Give a brief sketch of the properties of the solar spectrum, and account for its dark lines. Describe the spectra of Ba, Sr, Ca, Mg, Li, Ti, and the absorption bands of blood and bile.

4. The heat of combustion of CO is 2431 units, and that of C to CO, 7900 (Andrews): calculate from these data how much heat is evolved by one part by weight of C burning to CO.

5. How are the following bodies prepared?— N_2O , CO, Cl_2 , Cl_2O , HI, H_2SO_4 , P_2O_5 , H_3PO_4 , and H_2S .

6. Ferrocyanide of potassium is heated with strong, and with dilute sulphuric acid: write the reaction in each case.

7. State the following laws:—Watt's and Southern's as to the heat of steam, Kopp's as to the boiling point of organic liquids, Gay Lussac's as to combination, Dulong and Petit's as to specific heats, Avogadro and Ampère's as to gaseous molecules, and Mitscherlich's as to isomorphism. If there are any real or apparent exceptions to any of these laws, give them.

8. Name all the acids of phosphorus, give their formulae, modes of preparation, and characteristic properties. Also contrast them with any similar compounds of other elementary bodies.

9. How much oxygen is contained in 1000 grams of potassic dichro-

mate and of potassic permanganate respectively? How much oxygen will an equivalent of each body evolve when heated with an excess of sulphuric acid, and how much oxalic acid therefore will they oxidize? 10. Give an account of the alkali metals and their chief compounds, and of the processes for their detection and separation.

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Chem. Ex-
amination.

[Engineering Students may omit questions 15 to 18 inclusive; first year Students of Chemistry may omit questions 17 and 18.]

11. Give the tests for arsenic, antimony, hydrocyanic acid, nitric acid, lead, and tin.

12. Name the chief ores of iron, zinc, tin, lead, and copper; and give a sketch of the manufacture of iron from any of its ores, explaining the processes employed.

13. How is coal gas prepared? What are the products of the decomposition of coal when heated in retorts, and what are the constituents of the purified gas?

14. How is the degree of hardness of water estimated, and to what is it due? What is the nature of the precipitate caused by soap in hard water? Give Clark's process for softening water.

15. Name and classify the acids of the fatty series, and give their formulae.

16. 0.535 gram of a volatile base yielded on combustion 1.54 gram of carbonic acid, and 0.405 gram of water. Calculate the simplest empirical formula for the base on the assumption that it contains only C, H, and N.

17. What is the nature of the organic bases or alkaloids? Show their analogy with ammonia, and mention some of their chief properties, and of the general processes for extracting them. What kind of bases are Conyilia and Nicotylla? Give their rational formulae.

18. What is known as to the constitution of the following bodies: urea, glycerine, taurine, kreatine, stearin, and olein?

19. What is meant by electrolysis? Write an account of the process, and state whether there is any difference in the action of the current on different electrolytes.

20. Give a full description of the processes which take place in an active Grove's battery; and explain the quantitative relations between the gases liberated in a Voltameter and the zinc consumed in the battery. Show by means of Ohm's law how the power of the current in conductors of great and weak resistance is affected by the number and magnitude of the cells.

Pass.

[Only eight questions are to be attempted, one of which must be the fifth.]

1. Name some freezing mixtures, and state the principle of their action.

2. How is the latent heat of a vapour ascertained? Also its specific heat, and tension?

3. What is the weight of 100 litres of oxygen at 10° C. and 760 mm.?

4. How are the following bodies prepared?— NH_3 , C_2H_6 , KClO_3 , HNO_3 , HCl , PH_3 , $\text{C}_2\text{H}_4\text{O}$, and $\text{C}_2\text{H}_5\text{N}$? Give the reactions in each case.

5. Explain what occurs in the following cases:

(a.) Iron is burned in oxygen; Phosphorus is burned in air.

(b.) H_2S is heated with granulated tin, with K, with SO_2 and with Cl.

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amination.

- (γ.) H_2O , Cl , I , and HCl respectively are brought in contact with ammonia.
- (δ.) Oxalic acid is heated with oil of vitriol.
- (ε.) Barium chloride is added to sulphuric acid, and nitrate of silver to the solution of a chloride.
- (ζ.) Sulphide of ammonium is passed through solutions of alum, iron, and potash.
- (6.) How is gunpowder prepared? What are the possible products of its combustion, and to what is its great explosive power due?
7. Give the formulae of the alums, and contrast them together.
8. What bodies are represented by the following formulae? $\text{H}_3\text{P}_2\text{O}_7$, KHCO_3 , HPO_3 , Ca_2ClO , As_2S_3 , K_3FeCy_6 , $\text{K}_2\text{Cr}_2\text{O}_7$, SiO_2 .
- Give the formulae of sulphuric anhydride, borax, ferrocyanide of potassium and ferric sulphate.
9. How many volumes of their respective elements can be obtained from two volumes of each of the following gases: $1-\text{NH}_3$, H_2S , CO , CH_4 , C_2H_4 , $\text{C}_2\text{H}_6\text{O}$.
10. Give the general formulae for the primary alcohols, the glycols, and the glycerines; also for the ethers, aldehydes, ketones, amides, amines, and nitriles.

CIVIL ENGINEERING.—*Examiner, Professor James Thomson, LL.D.*

FIRST YEAR STUDENTS. GEOMETRICAL DRAWING.

[NOTE.—The numbers annexed to the several questions are value assigned to them, indicating their relative importance for the examination.]

1. For Pass only:—Need not be answered by Honor Candidates, as it will count nothing towards a Prize. Explain clearly what is meant in Descriptive Geometry by the following expressions:—*The two planes of projection*:—*The plane of delineation*:—*The projections of a point*:—*The projections of a line*:—*The projecting plane of a straight line*:—*The traces of a line*:—*The traces of a plane*. (6 for Pass; 0 for Honor.)
2. Supposing two planes to be given by their traces, explain how to find the projections of the common section of the planes. [To answer this well you should treat of several varieties of cases, and should work out one or two examples. (5).]
3. Given a point by its projections, and given a plane by its traces; explain how to find the traces of the plane which would pass through the given point, and would be parallel to the given plane. [To answer this well you should explain some varied methods suitable for various conditions of the data; and you should work out at least one example. (5).]
4. In the accompanying figure for Question 4,* find accurately the intersection of the straight line ad , $a'd'$ with the plane $\beta\beta'$: and explain your work. [The accented letters are to be understood as belonging to the vertical plane of projection.] (3.)
5. In the accompanying diagram,* in which xy is the "ground line," a red straight line ab , $a'b'$ and a blue straight line cd , $c'd'$ are given by their projections. Find accurately the traces of the plane which passes through the red line and is parallel to the blue line: and explain your construction. [The accented letters are to be understood as belonging to the vertical plane of projection.] (4.)
6. Explain what is meant by linear perspective; showing what are the essential conditions to be accomplished in order that a picture on any

* The diagram is not printed in the Calendar.

surface, plane or curved, may be a true one in linear perspective; and in order that it may be seen as a true outline representation of the original. (5.)

7. What is meant by the vanishing point of a straight line; on what principle may it usually be easily found; and for what reason does it come naturally and properly to be called by its designation *vanishing point*? (5.)

8. What are the ordinarily made assumptions as to the form and position of the picture surface in perspective drawing, which lead to the result that the perspective representations of straight lines must be straight; and that the representations of a set of parallel vertical straight lines must be parallel to one another: and how is it that the representations of a set of parallel horizontal straight lines will, except in a particular case, be all convergent towards a point in the picture? (4.)

9. Observing that in making a perspective drawing by use either of horizontal or of vertical projections of visual rays, you can use one or both projections of the original object *if that object be small* (a small box, or a small instrument, for instance); but if the object be large (a house, for instance) any plan or elevation you can use of that object must be drawn on a reduced scale, or must be what may be regarded as projections of a model of the object: explain, giving proof, how it is that in drawing a true perspective of the model, by use of its projections, you are drawing a true perspective of the large original object. (5.)

10. A large picture may properly be reduced by diminishing all its linear dimensions in a constant ratio (that is, in a ratio the same for all). Explain why that is so; and explain how the eye must be situated relatively to the reduced picture; its proper position relatively to the large picture being given? There is a limit, depending on optical conditions of the eye, below which the reduction of the picture to smallness of size cannot properly be carried. Explain this. (4.)

11. Supposing that there is given the vertical projection, or the axial section of a solid of revolution (a baluster for instance) with its axis vertical; explain how to draw the perspective representation of the object on a vertical picture plane; the relative positions of the object, the eye and the picture plane being all given. (5.)

12. A point being given by its projections and a vertical surface, curved or plane being given by its horizontal projection or horizontal trace; and the direction of parallel rays of light by which shadows may be cast being taken to be that commonly assumed for the projection of shadows; and the data being such that the shadow of the given point would fall on the given vertical curved or plane surface: show how to find the vertical projections of the shadow of the given point, and work out and explain an example. (4.)

13. Follow up your answer to the foregoing question by assuming a straight line not parallel to either plane of projection as being given by the projection of its extremities; and then finding its shadow cast on a vertical curved surface given by its horizontal trace, that trace being so assumed by yourself as to make the shadow of the straight line fall wholly on the curved surface. You may either assume the light as falling in the direction usually adopted or assume it as falling in any other direction you may select and specify. (5.)

14. Find by geometrical construction the angle between a straight line and its isometric projection; and also find by geometrical construction the relation or ratio between the "*natural scale*" and the "*isometric scale*" (5.)

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SECOND YEAR STUDENTS.

SURVEYING, LEVELLING, MENSURATION, &c.

1. Proceeding on the supposition that rays of light advance along straight lines through the air, or in other words, neglecting for simplicity the atmospheric bending of the rays of light, explain clearly how it is that the line of collimation of a theodolite or levelling instrument, as determined by certain parts of the instrument (in a way which you ought to state) is to be regarded as the line along which vision is specially directed, or as the special line of vision, in taking a sight on a distant object for an observation. Recollect that within the field of view of the instrument a considerable extent of a distant object can be seen, though there is one point of the object specially regarded as that on which the instrument is set, or the sight is taken. Try to give clear explanations on the matters here suggested. Any amendment of the explanation to adapt it for cases in which atmospheric bending of the rays has to be regarded as sensibly influential could be made an after consideration, not required to be entered on in the present question. For many practical observations too, the object viewed is not so far away as to make the atmospheric bending of the rays be at all sensibly influential on the correctness of the observation. You may explain as an addition to your previous answer why the atmospheric bending would introduce sensible effects when the object is very distant but not when it is very near. (4 + 1.)

2. Whether will levelling between two remote points, 20 or 30 miles apart for instance, be more trustworthy if made with numerous short sights, none exceeding about 3 chains or with a small number of long sights extending to such lengths as 10, 15, or 20 chains, no means being provided in either case for placing the instrument midway between the staff stations used for the back sight and fore sight for the instrument station. Explain clearly the reasons for your answer; in giving your answer you should bear in mind that one source of error in each case may be a slight want of perfect adjustment between the line of collimation and the longitudinal bubble tube, and that there are other sources of error which you ought also to consider. (4.)

3. In a triangle which may be denoted as ABC, with a split line AD, the following lengths have been noted as measurements made on the ground; $AB=897$, $AC=1074$, $BC=1500$, $AD=633$, $BD=600$. Check the measured lengths of the three sides as to whether they be accurate or not. (6.)

4. Explain clearly the chief steps in the process of ranging a railway curve by angles at the circumference in cases in which a transversal is used. (6.)

5. In a chain survey, explain how the measurement of a chain line may be continued across a river by one or more methods not dependent for due accuracy on a high degree of accuracy in the setting out of one or more perpendiculars. The river is to be understood as being too wide to admit of stretching the chain across it. Explain in contrast one or two commonly used methods which depend essentially on great accuracy in the setting out of perpendiculars. (4.)

6. Describe the mode of plotting the chain lines of a traverse survey by aid of Howlett's semicircular protractor; explaining at the same time the nature of that instrument. Also seeing that a parallel ruler with rollers is often useful in connexion with the protractor, and a long straight

edged ruler in such plotting; explain how to test the rolling parallel ruler to find whether it gives very exact work or not. (4.)

7. Give the reading of the horizontal limb of the theodolite submitted to you. (4.)

8. State and demonstrate the rule taught in the class under the name, "Simpson's rule," for finding the area of a curve by an odd number of equidistant parallel ordinates drawn across it, the area being limited by the extreme ordinates; and explain how the same rule may be applied in determining the volume of a solid by an odd number of equidistant parallel sections, the volume being limited by the extreme sections. (4.)

9. In a transit theodolite, explain clearly why it is that the line of collimation ought to be perpendicular to the horizontal axis of rotation. (2.)

10. Supposing that the line of collimation sweeps a plane surface in space when the telescope is turned round its horizontal axis, what is the essential condition of adjustment for making that plane be vertical when the vertical axis is truly vertical. (2.)

11. What is the use of the striding level which usually or always is provided as an accompaniment to the transit theodolite. (2.)

12. How might the adjustment for which the striding level is provided be tested and effected without it, if it were broken, or if none were supplied by the makers of the transit theodolite. (3.)

13. Find in acres, roods, and perches, the area of the enclosure shown surveyed in the field book leaf submitted to you*; taking the area of the whole large triangle of chain lines as being already calculated and found to be 1,050,700 square links. (5.)

SECOND AND THIRD YEAR STUDENTS AND COATES' PRIZE CANDIDATES.

OFFICE AND FIELD WORK.

1. A person who may be called A, in order to test his Gravatt's levelling instrument places two stones firmly in a swamp of still water with the top of each stone exactly at the water surface: he sets up the instrument and ascertains that its distance from one of the stones is about 20 links, and that its distance from the other is about three chains; and he takes readings in the usual way on the staff placed first on the one stone and then on the other and finds the two readings to agree, and thinks therefore that his instrument is in good adjustment.

Another person, B, acts in like manner with another Gravatt's levelling instrument, only that he has the one stone at about 20 links from the instrument, and the other at about 20 chains from the instrument; and he finds the two readings not to agree, but makes them agree by slightly altering the height of the diaphragm in the telescope, while keeping the bubble of the longitudinal bubble tube still at middle; and now he thinks his instrument is in proper adjustment. In both cases the bubble remains at middle of the tube while the telescope is made to revolve in azimuth round the vertical axis. What remarks have you to make as to rightness or wrongness of the procedure and conclusion of each person? Also, if either conclusion is materially wrong, calculate the amount of the error. (4.)

2. How may a Gravatt's Level be tested in the field (in ordinary cases without the use of an extent of still water supposed to be available in the

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foregoing question) to ascertain whether it gives level sights or not, when duly set up with the bubble at middle in the longitudinal bubble tube! You should explain clearly a practical process for doing this. (4.)

3. Supposing that on setting up a theodolite, and making all the usual tightenings of screws or clampings of parts preparatory to an observation, you find that on applying gentle forces to the telescope tending to make it turn in azimuth alternately in opposite directions, it takes different positions, so that on release from the turning forces, it does not spring back so as to give a sight always in the same direction in azimuth; mention the chief places where the detrimental slackness may be suspected to occur, and tell how you would probably best proceed to test for the fault to find where it occurs, and what remedy you might in some common case be able readily to apply on the spot. (4.)

4. For a block or portion of the earthwork of a railway cutting situated between two adjacent points in the centre line where levels have been measured as usual; given the end heights $h_1=42$ feet, and $h_2=34$ feet; the length $l=66$ feet; the breadth of formation surface $b=32$ feet; and the slopes $2\frac{1}{2}$ to 1; calculate the quantity of earth according to the ordinary prismoidal method, the method of mean heights, and the method of mean areas. (3.)

5. In regard to perspective drawing, explain clearly the following terms:—*central horizontal line*, or *horizon line*; *central vertical line*; *vanishing point of or pertaining to a straight line*; *intersecting point of a straight line*. Explain the methods of making perspective drawings of houses, &c., by use of vanishing points, intersecting points, and horizontal projections of visual rays: and by vanishing points, intersecting points, and measuring points. In reference to your explanations as to intersecting points of lines for a perspective of a house, you should give clear explanations as to what you mean by an intersecting point for an original line, seeing that most of the lines of the real house for which intersecting points may have to be used would not intersect the picture plane within your reach. By properly introducing the notion of a model of the house you may make this last part of the subject in question clear. (6.)

THIRD YEAR STUDENTS AND COATES' PRIZE.

6. For an Elevation of an oblique bridge on a vertical plane taken parallel to the oblique face, explain how to draw truly the face joints, and to extend their curves beyond the limits of the face of the arch, that is to say to extend their curves in the plane of the oblique face, outside of the extrado and inside of the intrado. (5.)

THIRD YEAR STUDENTS AND COATES' PRIZE CANDIDATES.

CIVIL AND MECHANICAL ENGINEERING AND ARCHITECTURE.

1. Give a definition of the Modulus of Elasticity for longitudinal stresses of pull or push: and show what relation it has to the alteration of length of a unit cube caused by a unit of push or pull stress applied perpendicularly on two opposite faces of the cube, so that the push or pull acts in the direction selected to be regarded as the length of the cube. You may give the definition in two or three varied modes of expression in which it has sometimes been given; and show how they agree. (4.)

2. In respect to a beam subjected to bending by transverse forces, *Appendix, No. 8.*
 prove, or else explain as far as you can, the formula $\frac{1}{r} = \frac{M}{IE}$; where *General Class Examination.*
M is the *bending moment*, or the *moment of the bending motive* at any part of the length of the beam, and $\frac{1}{r}$ is the curvature induced by that bending motive. The meanings of *I* and *E* are to be explained by yourself. (5.)

3. A rectangular beam of red pine, whose cross section is 12 inches in breadth and 14 inches in depth, and whose density is 42 pounds to the cubic foot, rests horizontally across a span 34 feet wide between points of support (so that it may be regarded as being 34 feet long, and supported by vertical forces at its ends); and besides having to bear up its own weight, it is loaded with two tons at middle. Find what is the "*bending moment*," or the *moment of importance* of the "*bending motive*," or the "*moment of the bending couple*" at the middle of its length. The moment required is to be expressed by the pound as unit of force, and the inch as unit of length. (4.)

4. With a view to find whether the beam in the foregoing question is strong enough for its loading, calculate what would be the moment of the bending motive which would just break that beam, taking the "*modulus of rupture*" for the red pine timber as being 8,000 in the formula $M_r = \frac{1}{6} R b h^2$; the inch being the unit of length and the pound the unit of force; and *M_r* being the moment of the rupturing bending motive, or of the "*rupturing couple*"; and *b* and *h* being the breadth and depth of the beam in inches. (4.)

5. In order to explain the origin of the formula in the foregoing question give a definition of the *modulus of rupture*, *R*, as taught in the lectures, in adaption to the process of thought that has led to the formula, from starting with defining the modulus as a stress in an extreme fibre according to a hypothetically assumed distribution of stresses in the cross section when the beam is on the point of breaking. (4.)

6. Draw a neat hand sketch showing the Corinthian capital. (4.)

7. Draw neat hand sketches showing the Grecian Doric capital; and the Tuscan, Roman Doric, and Attic bases. (3.)

8. What is commonly the nature and what are the chief uses of the Schedule of Prices usually referred to in the Specification and Tender for an engineering work; and how or by what persons or parties is it usually made out as to its form and as to its prices? (4.)

9. Draw a sketch with figured dimensions showing a cross section which you would consider suitable for an embankment for a large reservoir for water at a point in the line of proposed embankment where the natural surface of the ground stands 50 feet below the overflow level intended for the water in the reservoir, or say 52 feet below the highest level to which the water surface is expected ever to rise in the reservoir in floods. In this you are to assume that the ground at the site of the proposed embankment, except for a little depth downwards from the surface, is of a firm, compact, earthy character, scarcely at all pervious to water before being broken up, but not suitable for making clay puddle, and that there is about a foot deep of vegetable soil at the surface, and that the earth is probably somewhat loosened for a few feet deeper by roots of trees, burrowing of animals, and other influences. Also you are

Appendix,
No. 2.

General
Class Ex-
amination.

to understand that good clay can be obtained from some places within the site of the reservoir.

Your sketch should show some such dimensions and slopes as are commonly used in cases such as the one proposed to you.

Give written explanations as to how the earthwork ought to be executed; the explanations wanted being specially such as might properly be used as clauses, or as notes for clauses, for a Specification for a contract for the performance of the work. (5.)

10. In reference to the flotation, and stability, of ships statically considered (that is without the tossing action of waves), explain the meanings of the terms *centre of buoyancy*, *metacentre*, and *righting-moment*. Also explain what must be the character of the change of relative position of the centre of gravity of the ship, and centre of gravity of its "displacement" caused by a slight angular declination of the ship from its upright position, in order that the ship may tend to return to the upright position instead of tending to decline farther away. Mention how the stiffness of a ship or her resistance to being declined through a small angle from the upright position, is connected with the height of the metacentre above the centre of gravity of the ship. (5.)

11. In accordance with the nomenclature used in the lectures on Hydrokinetics, tell what is meant by fall or rise of *pressure-column top* in flowing water, and distinguish clearly between "*virtual fall*" and "*real fall*" in reference to water flowing through a crooked or uneven pipe from a reservoir, or flowing out of a vessel through an orifice into the air, or out of a vessel through an orifice into water covering the orifice, or flowing in other various modes. (4.)

12. In reference to the flow of water in pipes and open troughs, or channels, explain the usual meanings of the following terms: (a.) *Hydraulic inclination*, *Virtual declivity*, or *Virtual inclination*: (b.) *Wetted perimeter*, or *Border*: (c.) *Hydraulic mean depth*, which for pipes has been sometimes called "*mean radius*." (4.)

13. On the hypothesis that for the case now to be considered, water may correctly enough be regarded as being a frictionless and incompressible fluid, explain or sketch out the chief points of a demonstration to prove that the quantity of water flowing per unit of time through a

V gauge notch should be expected to be proportional to the $\frac{5}{2}$ power of the height from the vertex of the notch to the still water surface level in the pond from which the water issues through the notch. Part credit will be given for a brief statement of the chief condition of the flowing streams for different heights, especially as to relations between the form of the stream lines, or filaments of flow, for different heights, and as to relations between velocities in the different cases, and consequent relations between the quantities flowing per unit of time. (6.)

14. Give an account of the Decorated Style of Gothic Architecture: mentioning also the style which preceded and followed it. (5.)

15. Give information, aided by hand sketches, explaining some of the chief arrangements for allowing waste and foul water to flow away from houses, yards, &c., without permitting the passage of foul air out from the sewers. Also explain some of the frequent defects in arrangement, or in execution, or in preservation in consequence of which the foul air often does issue into houses, and yards, &c., even which considerable cost has been incurred with a view to its prevention: and describe a smoke test mentioned in the lectures which may often be practicable for finding whether there be leakage of sewer air into houses, or for detecting where it occurs. (3.)

CHEMISTRY.—*Examiner, T. Cranston Charles, M.D.*

*Appendix,
No. 2.*

COATES' PRIZE.

General
Class Ex-
amination.

ANALYTICAL CHEMISTRY.

1. How would you make a quantitative analysis of ordinary coal gas?
2. Give all the methods with which you are acquainted for the quantitative estimation of iron.
3. How may silicates be divided for analytical purposes? Name a few silicates, and give the formulæ of Felspar, potash mica, and steatite. Write a full account of the quantitative analyses of Natrolite and Garnet, giving all the precautions to be adopted in the separation of the silica.
4. What are the chief methods employed for ascertaining the amount of organic matter present in water.
5. How would you separate the following bodies if present in a mixture?—As, O₂, HgCl₂, CuSO₄, Fe₂ Cl₃, Al₂Cl₃, MnCl₂, NH₄Cl, and Sn.
6. Describe the process of cupellation.
7. Give a sketch of the method you would employ in making a quantitative analysis of an ore of iron containing clay, and a trace of manganese; also, the course you would pursue in making your preliminary qualitative examination.
8. What are the dry tests for salts of Cu, Pb, Hg, As, Sb, Al, Cr, and Mn?

NATURAL PHILOSOPHY.—*Examiner Professor Everett, D.C.L.*

EXPERIMENTAL PHYSICS.

1. A uniform bar 6 feet long, and weighing 20 lbs., has a weight of 10 lbs. hung at one end, and a weight of 100 lbs. at the other. About what point will it balance?
2. A piece of glass, of sp. gr. 2.5, weighs 6 oz. in air. What will be its apparent weight in water; and what weight of fir, of sp. gr. 0.7, will be required to float it?
3. If a cubic decimetre of air at 0°C. and 760 mm., weighs 1.293 gramme, what is the weight of a cubic decimetre of air at 200°C. and 750 mm.?
4. In speaking of thermometers, what is meant by the real as distinguished from the apparent expansion of mercury? If the former is $\frac{1}{5500}$, and the latter $\frac{1}{6500}$ for a degree Centigrade, what does the difference of these fractions represent?
5. What are the laws of electrical attraction and repulsion; and how do you reconcile them with the fact that a pith ball connected with the earth is attracted by an electrified body.
6. Describe some one form of constant battery; and explain on what its constancy depends.
7. When is it expedient to connect all the coppers of a battery together, and all the zincs together; and when is it expedient to connect the cells in a series?
8. What is Ampère's rule for the deflection of a needle by a current.
9. Sketch a diagram representing the course of a beam of common

Appendix,
No. 3.

General
Class Ex-
amination.

white light through a prism; and describe the arrangements necessary for throwing a pure spectrum on a screen.

10. If the object-glass of a telescope has a focal length of 30 inches, and the eye-piece, when used as a microscope, makes a small object appear 20 times larger in diameter than it would appear to the naked eye at a distance of 10 inches, what is the magnifying power of the telescope?

11. Describe the principal experiment by which the velocity of sound in water was directly determined.

12. Write down the numbers of vibrations which correspond to the 8 notes of a complete octave, the number for the lowest note being 264.

Examiner, Dr. Cunningham.

BOTANY.

[Senior students omit the two first, and Junior students the two last questions.]

1. Give an account of the principal forms of crystalline bodies which occur in the vegetable tissues, mentioning some of the natural orders of plants in which they specially prevail.

2. State what you know regarding the functions of leaves.

3. Give the names and characters of the principal forms of capsular fruits.

4. Describe the general structure of the ripe seed in any ordinary dicotyledonous plant, and mention the names of a few orders where albumen is present, together with some of those in which it is absent.

5. State the principal characters of the order Solanaceae, and mention some of the more important genera included in that order.

6. Give the characters of the order Ericaceae, together with the names and distinguishing characters of the orders most closely allied.

7. Describe the structure of the flower in *Polygala Vulgaris*.

8. Mention those points in which Liliaceae, Melanthaceae, Amaryllidaceae and Iridaceae differ from one another, and give the names of a few genera included in each of these orders.

9. Give the names and distinguishing characters of the sub-orders of Saxifragaceae.

10. Describe the mode of reproduction in Marsileaceae, Ferns, Equisetaceae, and Lycopodiaceae.

CHEMISTRY.—*Examiner, T. Cranston Charles, M.D.*

PRACTICAL CHEMISTRY.

1. Give the tests for the following bodies: Mg, Cr, Sb, Cu, and Bi.

2. Give the test for HNO_3 , H_3PO_4 , HCN and $\text{C}_2\text{H}_3\text{O}_2$.

3. The sulphocyanate, acetate and meconate of iron form red-coloured solutions.—How are they distinguished?

4. Describe in full the methods to be pursued in analysing a mixture containing AgNO_3 , $\text{Pb}_2\text{C}_2\text{H}_3\text{O}_2$, $\text{SbOKC}_2\text{H}_3\text{O}_2$, CuO , Sn , Bi_3NO_3 , Fe_2O_3 , MnO_2 , CaCO_3 , and MgCO_3 .

5. Give an account of the various methods that have been employed for separating arsenious oxide from organic matters. State its most characteristic tests, and mention any sources of fallacy to which these tests are liable.

6. Write a short sketch of the general principles of Volumetric Analysis; and describe the processes of Acidimetry and Alkalimetry.
7. Describe fully the quantitative determination of sugar:
- (a.) By Fehling's sulphate of copper solution,
(b.) By Fermentation.
8. What are the tests for strychnia, morphia, uric acid, the biliary acids, and blood?

Appendix,
No. 8.
General
Class Ex-
amination.

MATRICULATION EXAMINATION, OCTOBER, 1872.

Matricu-
lation Ex-
amination.

THE ENGLISH LANGUAGE AND LITERATURE.—*Examiner, Professor Yonge.*

- From what foreign languages is the English language principally derived? What events in the history of the country led to those languages affecting, modifying, or superseding the previous language of the inhabitants.
 - What are the principal differences between the classical languages (those of Greece and Rome) in respect of the declension of nouns and verbs.
 - "Many memorials are extant which he from time to time presented to Louis to urge him taking steps to his restoration; in every one of which he fell into the gross error of supposing that that restoration was to be the consequence of William's unpopularity, and not of any regard or esteem that might be felt for himself: in fact, any attempt to be populous he thought beneath his dignity. So selfblinded was he that in one document he actually mentions as a personal grievance, and as a slur upon the energy and honesty of the nation that people is now so much at their ease that there are not many who will risk their lives and fortunes to restore him, forgetting how many, while he was actually king, risked both to get rid of him."
- Copy out the preceding passage, correcting any faults of spelling or grammar that may occur in it, and any misuse of words.
- Give a list of the kings of England from William I. to Henry VII. And mention in what reigns the following events occurred—the battle of the Standard, the signing of Magna Charta, the battle of Lewes, the meeting of the first English Parliament, the annexation of Ireland to the English Crown, the conquest of Wales, the battle of Crecy, the peace of Bretigny, the treaty of Troyes, the battle of Tewkesbury, the battle of Bosworth.
 - Trace the roads from London to Edinburgh; and those from Calais and from Dieppe to Paris; naming the most important towns and rivers which lie on the different roads; and (as to the first) the different counties which must be traversed.

SUBJECT FOR ESSAY.

THE EXPLOITS AND CHARACTER OF WILLIAM THE CONQUEROR.

MATHEMATICS.—*Examiner, Professor Purser.*

ARITHMETIC.

- If 30 men do a piece of work in 33 days, how many boys will do it in 55 days, supposing that 9 men do as much as 16 boys.
- Calculate the interest on £2,517 10s. 6d. for 10 months and 8 days, at $4\frac{1}{2}$ per cent. per annum.

Appendix,
No. 2.Matura-
tion Ex-
amination.

3. Find the value of $\frac{3}{4} - \frac{5}{18} + \frac{4}{15}$ and divide the result by $\frac{19}{20}$.

Express 7 hours 13 minutes 25 seconds as a fraction of a day.

4. The sun's light takes 8m. 13.3s. to reach us. Calculate to three places of decimals the fraction of a second which the moon's light takes supposing the distances of the sun and moon to be 92 million miles and 240 thousand miles respectively.

5. The area of a circle $= \pi r^2$ where $\pi = 3.14159$ and r is the radius. Calculate the radius of a circle which shall contain an acre.

EUCLID.

1. Parallelograms on the same base and between the same parallels are equal to each other.
2. If the square described on one side of a triangle be equal to the sum of the squares described on the other two, the angle opposite that side is a right angle.
3. Divide a line so that the rectangle contained by the whole line and one of the parts may be equal to the square on the other part.

ALGEBRA.

1. Divide $1 - 5x^4 - 3x^3$ by $1 - x - x^2$.
2. Find the co-efficient of x^4 in
 $(1 + 2x + 3x^2 + 4x^3 + 5x^4)(1 - 2x + 3x^2 - 4x^3 + 5x^4)$
3. Solve the following equations—

$$\frac{x-7}{3} + \frac{x+1}{5} = \frac{19}{2} - \frac{x-13}{4}.$$

$$\frac{7}{x} - \frac{6}{x+1} = \frac{1}{x-3}.$$

$$\sqrt{x+13} = 1 + \sqrt{x}.$$

Peel Prize
Examina-
tion.

PEEL PRIZE EXAMINATION.

FIRST YEAR STUDENTS.

HISTORY AND ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

SUBJECT FOR ESSAY.

The Wars of the Roses; and their influence on the subsequent history of the kingdom.

Or,

The importance of the study of languages; among other points of view, in the assistance which the knowledge of one language affords for the acquisition of another.

GEOMETRY.—*Examiner, Professor Purser.*

1. Similar polygons are to one another in the duplicate ratio of their homologous sides.
2. Inscribe in a given circle two parallel chords such that the ratio of the chords shall be given and the distance between them also given.

3. Draw a tangent to a circle from a point outside with the aid of a ruler only.
4. Construct a quadrilateral of given sides which can be inscribed in a circle.
5. Prove that the three pairs of opposite sides of a hexagon inscribed in a circle meet in three points which lie in one right line.
6. From a given point in the base of a triangle produced, draw a line, meeting the sides in two points, such that the difference of the perpendiculars let fall from these points on the base may be greatest possible.
7. A semicircle is drawn with its centre at the middle point of the base of a given isosceles triangle to touch the sides, show that if a variable tangent to the circle meet the sides AC and BC in X and Y respectively, the rectangle AX, BY is constant.
8. In any triangle, the centre of the circumscribing circle, the intersection of perpendiculars and the intersection of the bisectors of the sides lie in directum.
9. If equilateral triangles are described externally on the three sides of any triangle, prove
 - (a) That the lines joining their vertices to the opposite angles pass through a common point.
 - (b) That this is the point from which the sum of the lines drawn to the vertices of the triangle is least.
 - (c) That the whole lines so drawn to the vertices are each equal to this minimum sum.

Appendix
No. 8
Peel Prize
Examinations.

SCHOLARSHIP EXAMINATION, OCTOBER, 1872.

Scholarship
Examina-
tion.

LITERARY SCHOLARSHIPS.—FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDonall.*

I.—Translate the following lines from the *Ion* of EURIPIDES :—

οὐκ ἔστ' οὐκ ἔστιν θανάτου
παρὰ τὸν νόμον μέλις μοι
φανερὰ φανερὰ τὰ δ' ἦδη
σπουδαῖς ἐκ Διονύσου βορρῶν θοαῖς
ἐχιδναῖς σταγύσει μνηστῆρας φάνη,
φανερὰ θέματα νεκρῶν,
σμεροκαί μιν ἐμὲ βίῃ
λεύσιμῳ δὲ καταβροαί διστοίμῳ.
τίνα φύγαν—πταρόωσαν ἢ
χθονὲς ἐπὶ σκοτίῳ μηχανῶν—πορευθῶ,
θανάτου λεύσιμον ἔσταν
ἀπορρέγουσα, τερρίππῳ
ώκεισταν χαλὰν ἐπιβᾶσ'
ἢ πρέμνας ἐπὶ ναῶν;
οὐκ ἔστι λαθεῖν, ὅτε μὴ χρῆζων
θεὸς ἐκλείπῃ.
τί ποτ' ὦ μέλῃ διστοίμῳ! μῖνα
ψυχῇ σε παθεῖν; ἄρα θύλωσαι
δρᾶσαι τι κακὸν τοῖς τίλῃς αὐταῖς
πιστόμεθ', ὥσπερ τὸ δίκαιον;

Appendix,
No. 2.Scholarship
Examina-
tions.II.—1. Derive or decompose μελέα, θαῖς, νεπρίων, λεύσιμοι, περὶ
εσσαυ, τεθρίππων, χαλάν, χοήζων.

2. Elucidate any constructions which may seem noteworthy.

3. Explain from the preceding context the apprehensions here ex-
pressed by the Chorus.

4. Sketch very concisely the plot of this drama.

I.—Translate the following passage from the *Timon* of LUCIANUS :—

ὦ Ζεῦ νεύστω¹ καὶ φίλοι Κορέβοντες καὶ Ἑρμῇ κερῶε²! πόθεν χρυσίον τασσύνει;
ἢ που δυναὶ ταῦτά ἐστι; δίδω³ γούν⁴ μὴ θυβήσας εὖρος ἀνεγρήμενος.⁵ ἀλλὰ μὲν
χρυσίον ἐστὶν ἐπίσημον⁶ ὑπερβροῦ⁷ βαρὺ καὶ τὴν πρόσσω⁸ν ὑπερήδιστον.

ὦ χρυσὲ, διζώμα κάλλιστον βροτοῖς!

αἰθόμενον γὰρ πῦρ διττὸ διεπρίπτει καὶ νύκτωρ καὶ μετ' ἡμέραν. ἰδθί, ὦ φίλτατε καὶ
ἱερσσιμώτατε! νῦν πείθεσθαι καὶ δῖος ποτὶ γινέσθαι χρυσόν. τίς γὰρ οὐκ ἂν παρθεὺς
ἀνταπαιτουμενός⁹ τοῖς κάλλους ὑποδίσκαιο αὐτῷ καλὸν ἱερσστήν διὰ τοῦ τῆγους καταβή-
σιντα;¹⁰ ὦ δεικνύς¹¹ καὶ φιλότατῃ δοθῆναι¹² ἔρως μὲν τῷ Πανὶ τοσῷ ἀναθῆναι καλὸν
αὐτὸς δὲ ἦδη πᾶσαν προάμενος¹³ τὴν ἱερατείαν¹⁴ πυργίον σίκοισμῆσθαι¹⁵ ὑπὲρ τοῦ
θησαυροῦ¹⁶ μόνον ἱεροὶ ἱκανὸν ἐκδισσέσθαι¹⁷ τὸν αὐτὸν καὶ τόφον ἀποθανόντων ἔχειν μὲν
δεκά. δειδῆσθαι¹⁸ δὲ ταῦτα καὶ νενομοθετήσθαι¹⁹ πρὸς τὸν ἐπιλοισπον βίον—ἀμείβια πρὸς
ἄπαντας καὶ ἀγνωσίᾳ καὶ ὑπερφία²⁰ φίλος δὲ ἢ ξένος ἢ ἱταίρος ἢ Ἑλλείν βαμίς ὕδαρ
πολύς²¹ καὶ τὸ οἰκτεῖραι θακρίοντα ἢ ἱπικευρήσει²² δεομένην παρανομίᾳ καὶ κατὰδωκε
τῶν ἡθῶν²³ μονήρη²⁴ δὲ ἢ δίσαια, καθάπερ²⁵ τοῖς λόποις²⁶ καὶ φίλος εἰς Τίμων, οἱ δὲ ἄλλοι
πάντες ἰχθροὶ καὶ ἐπιβουλοὶ καὶ τὸ προσομαλῆσαι τοι σὺν τῶν μίσημα, καὶ ἦν τινα ἰδο
μόνον, ἀποφράς²⁷ ἢ ἡμέρα²⁸ καὶ ὅλας ἀνδριάντων²⁹ λιθίων ἢ χαλκῶν μηδὲν ἡμῖν θα-
φερήτως³⁰ καὶ μήτε εἰσῶκα δειχόμεθα περ' αὐτῶν μήτε σπουδῆς σπουδόμεθα³¹ ἢ ἱερὰ
δὲ ἔρος ἴστω πρὸς αὐτοῖς³² φαίλῃσι δὲ καὶ φράτορις³³ καὶ θυμῶν καὶ ἢ πατρίς σὺν
ψυχῇ καὶ ἀνωφελῶ³⁴ ἀνάρματα καὶ ἀνοήτων ἀνδρῶν φιλοτιμήματα³⁵ πλουτεῖται δὲ Τίμων
μίσος καὶ ὑπεροφάν³⁶ ἀπάντων καὶ τραφάν³⁷ μόνος καθ' αὐτὸν ἐκλασίας καὶ ἱπταῖων
φορητῶν³⁸ ἀπὸ πηλαγμῶν³⁹ καὶ θεοῖς θυέτω καὶ εὐχαρίσθαι⁴⁰ μόνος, ἐαυτῷ γαίῳ καὶ
δυμορῶ⁴¹ ἐκδὲ ἂν τῶν ἄλλων⁴² καὶ ἄποξ⁴³ ἐαυτὸν δεξιώσασθαι⁴⁴ δειδῆσθαι, ἦν δὲ ἀποθανόντων,
καὶ ἐαυτῷ στέφανον ἐπιμαγεῖν.

II.—1. Parse fully and accurately every word to which the figure 1
is annexed.2. Derive or decompose, as distinctly as you can, every word to
which the figure 2 is annexed.3. Elucidate very briefly any constructions or phrases which seem to
be noteworthy.

Translate the following unprepared passage :—

Δημοσθένης, λίγαι ποτὶ κωλυμένοις ὑπὸ Ἀθηναίων ἐν ἐκκλησίᾳ, βραχὺ ἔφη βούλο-
σθαι πρὸς αὐτοὺς εἰπεῖν¹ τῶν δὲ σιωπησάντων “ναιός,” εἶπε, “θέρεος ἀρε ἡμετέ-
σαστο ἔξ ἄστας θύον Μεγάρα² μεσούσης δὲ τῆς ἡμέρας καὶ σφοδρῶς φλέγοντος τοῦ
ἡλίου ἑκάτερος αὐτῶν βραδύτερον ὑποδύεσθαι ὑπὸ τὴν τοῦ θύον σκιά³ν εἰργον δὲ ἀλλή-
λους, ὁ μὲν μεμισθώσεται τὸν ὄντιν αὐτὴν τὴν σκιά⁴ν λίγων, ὁ δὲ μεμισθώμενος τὴν πᾶσαν
ἔχιν ἔξουσιαν.” καὶ ταῦτα εἰπὼν ἀπῆε. τῶν δὲ Ἀθηναίων ἐπισχόντων καὶ δεομένων
πρὸς τῷ λόγῳ ἐκθῆναι, “εἰ,” ἔφη, “ὑπὲρ μὲν ὅσον σκιά⁵ς βούλοσθαι ἀκούειν, ἐκ-
γούτος δὲ ὑπὲρ σπουδαίων πραγμάτων οὐ βούλεισθε;” Πάλλου δὲ ποτε τοῦ ὑπερεπεί⁶
πρὸς αὐτὸν εἰπόντος, ὅτι θυεῖν ἡμέρας ἀγωνισάμενος τάλαντον λάβει μισθόν, “ἐγὼ
δὲ,” εἶπε, “πάντα τάλαντα διαβον μίσιν ἡμέραν σιωπήσας.” παραφθαρείς δὲ τὴν φωνή⁷
ἐν ἐκκλησίᾳ καὶ θυοβηθείς τοῖς ὑπερεπεί⁸ς ἔφη δεῖν κρίναι ἐκ τῆς φωνῆς τοῖς δὲ βότα-
ρος ἐκ τῆς γνώμης.

1. Translate :

Bellum primum cum Latinis gessit, et oppidum ibi Apiolas vi cepit praedaeque inde maiore, quam quanta belli fama fuerat, reventa Indos opulentius instructiusque quam priores reges fecit. Tum primum circo, qui nunc maximus dicitur, designatus est locus : loca divisa Patribus equitibusque, ubi spectacula sibi quisque faceret, fori appellati. Spectavere farcis duodenas ab terra spectacula alta sustinentibus pedes. Ludicrum fuit equi pugilesque ex Etruria maxime acciti. Sollemnes, deinde annui mansere ludi, Romani magnique varie appellati. Ab eodem rege et circo forum privatis aedificanda divisa sunt loca ; porticus tabernaeque factae.

Trace the genesis of the legend of Tarquinius Priscus. What other institutions are attributed to him ? The name *ludi magni* is with Livy not convertible with *ludi Romani*. By what other name does he designate the latter ? Write a note on *ludi sollemnes deinde annui*.

2. Translate :

Cum promptum hoc ius velut ex oraculo incorruptum pariter ab iis summi infimique ferrent, tum legibus condendis opera dabatur : ingentique hominum expectatione propositis decem tabulis, populum ad contionem advocaverunt : et, quod bonum faustum felixque reipublicae ipsis liberisque eorum esset, ire et legere leges propositas iussere : se, quantum decem hominum ingenis providendi potuerit, omnibus, summis infimisque, iura aequasse : plus pollere multorum ingenia consiliaque : versarent in animis secum unicuique rem ; agitare deinde sermonibus, atque in medium, quid in quaque re plus minusve esset, conferrent : eas leges habiturum populum Romanum, quas consensus omnium non iussisse latas magis, quam tulisse videri posset. Quum ad rumores hominum de unoquoque legum capite editos satis correctae viderentur, centuriatis comitiis decem tabularum leges perlatas sunt : qui nunc quoque, in hoc immenso aliarum super alias acervatarum legum cumulo, fons omnis publici privatiue est iuris. Vulgatur deinde rumor, duas deesse tabulas, quibus adiectis absolvi posse velut corpus omnia Romani iuris. Ea expectatio, quum dies comitiorum appropinquarent, desiderium decemviro iterum creandi fecit. Iam plebs, praeterquam quod consulum nomen, haud secus quam regum, perosa erat, ne tribunicium quidem auxilium cedentibus invicem appellatione decemviris quaerebat.

Why was it necessary to emend the laws before they were proposed in the *comitia* ? Explain in the last sentence *jam*, and *cedentibus invicem appellatione*.

3. Translate :

Nec vero audiendi, qui graviter irascendum inimicis putabunt idque magnanimi et fortis viri esse censebunt. Nihil enim laudabilius, nihil magno et praeclearo viro dignius placabilitate atque clementia. In liberis vero populis et in iuris aequabilitate exerceanda etiam est facilitas et altitudo animi quae dicitur, ne, si irascamur aut intempestive accedentibus aut impudenter rogantibus, in morositatem inutilem et odiosam incidamus. Et tamen ita probanda est mansuetudo atque clementia, ut adhibeatur rei publicae causa severitas, sine qua administrari civitas non potest. Omnis autem et animadversio et castigatio contumelia vacare debet neque ad eius, qui punitur aliquem aut verbis castigat, sed ad rei publicae utilitatem referri. Cavendum est etiam ne maior poena quam culpa sit et ne iisdem de causis alii plectantur, alii ne appellentur quidem.

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tions.

Prohibenda autem maxime est ira in puniendo. Nunquam enim iratus qui accedet ad poenam medicocritatem illam tenebit, quae est inter nimium et parum, quae placet Peripateticis et recte placet, modo ne laudent iracundiam et dicere uti liter a natura datam. Illa vero omnibus in rebus repudianda est optandumque, ut ii, qui praesunt rei publicae, legum similes sint, quae ad puniendum non iracundia, sed sequitate ducuntur.

4. (a) What is the form of reduplication in Latin verbs? Distinguish the various forms of the perfect. Explain the formation of the perfects, *sumpsi, cessi, plausi, apoponidi, steti*.

(b) Analyze the form *amatumiri*. How is the future passive formed in those verbs which have no supine?

(c) Give fully and accurately, with examples, the rules for the sequence of tenses.

(d) Enumerate, with examples, the modal changes which take place in the *oratio obliqua*.

(e) Write in Latin: "He died October 14th, 1872;" and explain the construction, "id in ante diem XIII. Kal. Novembres distulit."

(f) Write in Latin:

When Hannibal had reviewed his auxiliary forces, he set out for Gades. Cn. Pompeius made preparations for the campaign at the close of winter, began it at the beginning of spring, finished it by the middle of summer.

1. Translate:—

Nos procul inde fugam trepidi celerare, recepto
Supplices sic merito, tacitique incidere funem;
Verrimus et proni certantibus aequora remis.
Sensit et ad eomitum vocis vestigia torsit.
Verum ubi nulla datur dextra adfectare potestas,
Nec potis Ionice fluctus aequare sequendo,
Clamorem immensum tollit, quo pontus et omnes
Intremuere undae, penitusque exterrita tellus
Italinae, curvisque inamugit Aetnae cavernae.
At genus e silvis Cyclopum et montibus altis
Excitum ruit ad portus et litora complent.
Cernimus adstantes nequiquam lumine torvo
Aetnaeos fratres, caelo capita alta ferentes,
Concilium horrendum: quales cum vertice ocelo
Aeriae quercus aut coniferae cypariassi
Constiterunt, silva alta Iovis, Iacuse Dianae.
Praecipites metus aeger agit, quocumque rudentes
Excitare et ventis intendere vela secunda.
Contra iussa moneat Heleni, Scyllam atque Charybdin
Inter, utramque viam leti discrimine parvo,
Ni teneant cersus; certum est dare lintea retro.
Ecce autem Boreas angusta ab sede Pelori
Missus adest. Vivo praetervehor ostia sexo
Pantagiae Megarosque sinus Thapsumque iacentem.
Talia monstrabat relegens errata retrorsus
Litora Achemenides, comes infelicis Ulixi.

Write brief notes on *ad sonitum vocis*; *adfectare potestas*; *ni teneant cersus*; *vivo—Pantagiae*.

2. Translate :

Rursus, quid virtus et quid sapientia possit,
Utile proposuit nobis exemplar Ulixen,
Qui domitor Troiae multorum providus urbes
Et mores hominum inspexit, latamque per aequor,
Dum sibi, dum sociis reditum parat, aspera multa
Pertulit, adversis rerum immersabilis undis.
Sirenam voces et Circae pocula nosti ;
Quae si cum sodis stultus cupidusque bibisset,
Sub domina meretrice fuisset tarpis et excors,
Vixisset canis immanus vol amica luto sua.
Nos unnerus sumus et fruges consumere nati,
Sponsi Peulopae, nebulones, Alcinoique
In cute curanda plus aeque operata inventus,
Cui pulchrum fuit in medios dormire dies et
Ad strepitum citharae cessatum ducere curam.
Ut ingulcent homines, surgunt de nocte latrones :
Ut te ipsum serves, non expergisceris ? Atqui
Si uoles sanus, curres hydropicus ; et ni
Posces ante diem librum cum lumine, si non
Intendes animum studiis et rebus honestis,
Invidia vel amore vigil torquebere. Nam cur,
Quas laedunt oculum, festinas demere ; si quid
Est animum, differs curandi tempus in annum ?
Dimidium facti, qui coepit, habet : sapere aude ;
Incipe. Qui recto vivendi prorogat horam,
Rusticus exspectat, dum defluat annis ; at ille
Labitur et labetur in omne volubilis aevum.

Explain the expressions *nos numerus sumus* ; *cessatum ducere* ; *curres hydropicus* ; *intendes studiis*.

3. Translate into Latin prose :—

But his conduct towards Octavius afforded his enemies a surer ground of censure. Even many of the people, it is said, were struck with the unprecedented violence of that measure ; and Gracchus thought proper to justify himself at some length, and endeavoured to show that the sacredness of the tribunitian office was destroyed, when a tribune turned his power to the injury of that part of the people whose interests he was especially appointed to guard. What effect his arguments produced on the minds of his hearers cannot be known ; but in the judgment of posterity his conduct has appeared indefensible. The negative of the tribunes was their peculiar and constitutional privilege, and it had often been exerted in defence of individuals against popular violence, as well as in behalf of the interests of the commons against the encroachments of the aristocracy. To set it aside whenever it opposed the inclinations of a majority of the comitia, and far more to degrade the tribune who interposed it, was a direct injury to the personal liberty of every citizen, and left him absolutely without defence against the wildest tyranny which the popular assembly might be excited by its orators to commit.

4. Translate into Latin verse :—

Thus lived—thus died she ; never more on her
Shall sorrow light or shame. She was not made
Through years or moons the inner weight to bear,
Which colder hearts endure till they are laid

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tions.

By age in earth; her days and pleasures were
Brief, but delightful—such as had not staid
Long with her destiny; but she sleeps well
By the sea shore, whereon she loved to dwell.

HISTORY AND THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

The Histories of England and France from 1066—1509.

1. What was the Salic Law? On what occasions was it decided whether it existed or did not exist in England; and in France?
2. Explain the origin and constitution of the English Parliament; and also those of the French Parliament.
3. Give a list of the kings of England, and also of the kings of France who reigned between 1066 and 1509, mentioning also the names and describing the characters and careers of any of their subjects of extraordinary eminence.
4. In what reign or reigns were the battles of Dam, Taillebourg, Sluys, Agincourt, Verneuil, fought; and what was the result of each battle?
5. What events make the reigns of Richard I., John (of England) Louis VI. (Le Gros) and Philip IV. (Le Bel) especially remarkable?
6. Relate the causes and principal events of the wars of the Roses.
7. What is meant when it is said that William the Conqueror introduced the feudal system into England?
8. Give the dates of the acquisition of Ireland and Wales by the kings of England, and of the occasions on which the kings of Scotland, owned or disowned their dependence to the English crown.
9. What was the extent of the dominions of the French king in the year 1300, and in the year 1509?

SECOND YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDonall.*

I.—Translate accurately and perspicuously the following lines from the Vth Book of the *Iliad* :—

ἡ μὲν ἰπποδαμείη χρυσάμπυκος· ἔστι μιν ἵππους
 "Ἡρῇ πρόσβασι θεά, θυγάτηρ μεγέλοιο Κρόνου·
 "Ἡβῇ δ' ἀμφ' ἐχέισσι θεῶς βάλε καρπύλα κέλεα¹
 χάλας δ' ἐκτάκυσμα² σάπηρος ἄξιον ἀμφίς·
 γῶν ἢ τοι χρυσὴ ἵνυς ἀσθίτος,³ σὺν δ' ὀπίσθην
 χάλας ἰπίσσωντα⁴ προσσκηρότα,⁵ θάυμα ἰδίσθαι,
 πλημυαὶ δ' ἀργύρου εἰσι περίδρομοι ἀμφοτέρωθεν.
 ἄλλος δ' ἐκ χρυσίοισι καὶ ἀργυρίοισιν ἱμάσιν
 ἐστίταται,⁶ λοιὰ δ' ἐκ περιδρομοὶ ἀντηγίς⁷ εἰσιν.
 τοῦ δ' ἐκ ἀργύριοις βρυχέει πέλεν· ἀπ' αὐτὰρ ἐπ' ἀκρῇ
 ἔησι χροῖσιν καλὴν ζυγόν, ἐν δὲ λίπαδνα
 κάλ' ἱβάλειν χροῖσι· ὑπὸ δ' ἐκ ζυγόν ἤγαγεν "Ἡρῇ
 ἵππους ὠκέποδας μεμαυῖ⁸ ἱρίδος καὶ ἀντήης.⁹

αὐτὰρ Ἀθηναίη, κοῖρῃ δῖος αἰγυόχοιο,
 πέπλον μὲν κατέχυνε¹ ἱανόν² πατρός ἱπ' οὐδὲν³
 ποικίλον, ὅν δ' αὐτῇ ποιήσατο καὶ κάμει χερσίν,
 ἣ δὲ χερσὶν ἑνέσσα⁴ Διὸς νεφέλῃ γιγνέσθαι
 τέχχισεν ἐς πέλιμον θωρήσσειτο δακρυόεντα.
 ἀμφὶ δ' ἄρ' ὤμους βάλετ' αἰγίδα⁵ θυσανέουσας⁶
 δαυήν, ἣν πῆρι μὲν πάντῃ φόβος ἱστιφάνεται,
 ἐν δ' ἔρις ἐν δ' ἄλκι ἐν δὲ κροῖσσοι ἰσκή,
 ἐν δὲ τε γοργυῖα⁷ κεφαλῇ δεινὸν τελέσσει
 δεινὴ τε συμπαρὲν τε, Διὸς τέρας αἰγυόχοιο.
 κρατὶ δ' ἱπ' ἀμφίβαλον⁸ κυνέην⁹ θέτο τετραφάλῃσιν¹⁰
 χρυσεῖαν, ἑκατὸν πολλῶν περιέλιεσσι¹¹ ἀραρυῖαν.
 ἐς δ' ὄχλα φλόγα ποτὶ βήσετο,¹² λάξετο¹³ δ' ἔγχος
 βροθὸν μέγα στιβαρόν, τῇ δάμνησι¹⁴ στίχας ἀνδρῶν
 ἤρώων, τοῖσιν τε κοτίσσειται ὀβριμοπάτερη.¹⁵

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II.—1. Parse accurately and fully the words to which the figure 1 is annexed.

2. Derive or decompose the words to which the figure 2 is annexed.

3. Explain the *hiatus*, whether real or apparent, in vs. 4, 6, 21; and notice any other metric peculiarity which may present itself.

4. Elucidate any constructions which may seem noteworthy.

Translate the following unprepared passage:—

Διογένης Ἰωνίου Συναπίης, πλείων ἐς Αἰγύπτου, περὶ ταῖς ἀλλοῖς ὧν ἦρχε Σείρπαλος, ἐς Κρήτην ἀπαχθείς ἐπιπράσκειτο, καὶ τοῦ κήρυκος ἰσχυρῶς, "τί εἶδε ποιεῖν," ἔφη "ἀφρώτων ἀρχῆν" καὶ δείξας τινὰ Κορίνθιον ἀνάμυρον, τὸν Πηνελόην, ἔφη, "τοῦτον με πάλαι οὕτως διαπύουον χρῆζαι." ἀνέειπεν δὲ αὐτὸν Πηνελόης καὶ ἀπαγαγὼν ἐς Κόρινθον ἐπίστασι ταῖς ἑαυτοῦ παιδίαις, καὶ πᾶσαν ἐνέχειρσαι τὴν οἰκίαν· ὃ δὲ οὕτω πρὸς αὐτὸν ἐν πᾶσι διετίθη, ὥστε ἐκείνους περὶ τῶν Διγεν, "ἀγαθὸς δαίμων ἐς τὴν οἰκίαν μου ἐσελθόντα." φασὶ δὲ τοὺς γνωρίμους λυγρώσασθαι αὐτὸν θαλῆσαι τὸν δὲ εἰσὶν αὐτοῖς εἰπεῖν· οὐδὲ γὰρ τοὺς λίοντας δεδούλωκε εἶναι τῶν τρεφόντων, ἀλλὰ τοὺς τρέφοντας τῶν λεόντων· δεῦλος γὰρ τὸ φοβεῖσθαι, τὰ δὲ θηρία φοβεῖται τοὺς ἀνθρώπους εἶναι. ἔλεγε δὲ τῷ Πηνελόῃ τῇ πριαμένη δέων παιθεῖσθαι αὐτῇ, εἰ καὶ δεῦλος εἴη· καὶ γὰρ ἑαυτῇ ἢ κυβερνήτῃ, εἰ δεῦλος εἴη, πισθῆναι δι.

LATIN.—*Examinator, Professor Nesbitt.*

Translate, adding brief notes where you think it necessary:

1. Proxus, ut scribis, ita sentio. Turbat Sampsoeranus. Nihil est quod non timendum sit, ὁμολογουμένως τυραννίδα συσκευάζεται. Quid enim ista repentina adfinitatis coniunctio, quid ager Campanus, quid effusio pecuniae significant? Quae si essent extrema, tamen esset nimium mali, sed ea natura rei est, ut haec extrema esse non possint. Quid enim eos haec ipsa per se delectare possunt? Numquam huc venissent, nisi ad res alias pestíferas aditus sibi compararent. Di immortales! Verum, ut scribis, haec in Arpinati a.d. VI. circiter Id. Mai. non dessebitur, ne et opera et oleum philologiae nostrae perierit, sed conferemus tranquillo animo. Neque tam me εὐελπίστια consolatur, ut

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tions.

antea, quam ἀδιαφορία, qua nulla in re tam utor quam in hac civili et publica. Quin etiam, quod est subinane in nobis et non ἀφιλόδοτον—bellum est enim sua vitia nosse—adficitor quadam delectatione. Solebat enim me pungere, ne Sampicerasmi merita in patriam ad annos et maiora viderentur quam nostra: hac quidem cura certe iam vacuum est. Iacet enim ille sic, ut τρώεις Curiana? stare videatur. Sed haec coram. Tu tamen videris mihi Romae fore ad nostrum adventum: quod sane facile patiar, si tuo commodo fieri possit. Sin, ut scribis, ita venias, velim e Theophane expiscare quoniam in me animo sit Arabarcha. Quaeres scilicet, ut soles, κατὰ τὸ κηδεμευδὲν et ad me ab eo quasi ἐποθέας adferes, quam ad modum me geram. Aliquid ex eius sermone poterimus περὶ τῶν ὄλων suspicari.

2. P. Clodius quum statuisset omni scelere in praetura vexare rem publicam videretque ita tracta esse comitia anno superiore, ut non multos menses praetura gerere posset, qui non honoris gradum spectaret, ut caeteri, sed et L. Paullum collegam effugere vellet, singulari virtutis civem, et annum integrum ad dilacerandam rem publicam quaseret, subito reliquit annum suum seseque in proximum annum transtulit, non, ut fit, religione aliqua, sed ut haberet, quod ipse dicebat, ad praetura gerendam, hoc est, ad evertendam rem publicam, plenum annum atque integrum. Occurrebat ei mancam ac debilem praetura suam futuram consule Milone: eum porro summo consensu populi Romani consulem fieri videbat. Contulit se ad eius competidores, sed ita, totam ut petitionem ipse solus etiam invitis illis gubernaret, tota ut comitia suis, ut dictitabat, humeris sustineret. Convocabat tribus, se interponebat, Collinam novam dilectu perditissimorum civium conscribebat. Quanto ille plura miscebat, tanto hic magis in dies convalescebat. Ubi vidit homo ad omne facinus paratissimus fortissimum virum, inimicissimum suum, certissimum consulem, idque intellexit non solum sermonibus, sed etiam suffragiis populi Romani saepe esse declaratum, palam agere coepit et aperte dicere occidendum Milonem.

(a.) Explain the expressions, *summa annuum, se interponebat, Collinam novam conscribebat*. Give the names of the four city tribes.

(b.) "Tamen haec novi iudicii nova forma terret oculos." What was the innovation here referred to?

3. Translate and explain the following passages:

Diem mihi, credo, dixerat, multam inrogarat, actionem perduellionis intenderat.

Qui [Pompeius] cum decretum de me Capuae fecisset—

Testamentum simul obsignavi cum Clodio; testamentum autem palam fecerat et illum haeredem et me scripserat.

Habet etiam Campana lex executionem in contione candidatorum, si mentionem fecerit quo aliter ager possideatur quam ut ex legibus Julius.

Permagni nostra interest, te, si comitis non potueris, at declarato illo esse Romae. (By what legal form did Clodius become eligible for the Tribune?)

Puto Pompeium Crasso urgente, si tu aderis, qui per βούλην ex ipso intelligere possis qua fide ab illis agatur, nos aut sine molestia aut certe sine errore futuros.

4. Atque etiam ex omni deliberatione celandi et occultandi spes opinioque removenda est. Satis enim nobis, si modo in philosophia aliquid proficimus, persuasum esse debet, si omnes deos hominesque

celare possumus, nihil tamen avare, nihil iniuste, nihil libidinose, nihil incontinenter esse faciendum. Hinc ille Gyges inducitur a Platone, qui, quum terra discessisset magnis quibusdam habribus, descendit in illum hntum seneumque equum, ut ferunt fabulae, animadvertit, cuius in lateribus fores essent : quibus apertis corpus hominis mortui vidit magnitudine inusitata anulumque aureum in digito quem ut detraxit, ipse induit—erat autem regius pastor,—tum in concilium se pastorum recepit. Ibi quum palam eius anuli ad palmam converterent, a nullo videbatur, ipse autem omnia videbat, idem rursus videbatur, cum in locum anulum inverterent. Itaque hac opportunitate anuli usus reginae stapurum intulit eaque adiutricem regem dominam interemit, sustulit quos obitare arbitrabatur, nec in his eum facinoribus quisquam potuit videre. Sic repente anuli beneficio rex exortus est Lydine. Hunc igitur ipsum anulum si habest sapiens, nihil plus sibi licere patet peccare quam si non haberet. Honesti enim bonis viris, non occulta quaeruntur.

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tions.*

1. Translate, adding brief notes when you think it necessary :

Nou habet infelix Numitor, quod mittat amico :
 Quintillae quod donet habet ; nec deficit illi,
 Unde emeret multa pascondum carne leonem
 Iam domitum : constat leviori bellua sumptu
 Nimiram, et capiunt plus intestina postea.
 Contentus fama incesat Lucanus in hortis
 Marmoreis : et Serrano tenuique Saleio
 Gloria quantalibet quid erit, si gloria tantum est ?
 Curritur ad vocem iucundam et carmen amicae
 Thebaidos, laetam fecit quum Statius urbem
 Promisitque diem. Tanta dulcedine captos
 Afficit ille animos, tantaque libidine vulgi
 Auditur : sed, quum fregit subsellia versu,
 Esurit, intactam Paridi nisi vendat Agaven.
 Ille et militiae multis largitur honorem,
 Semestri vatua digitos circumligat auro.
 Quod non dant proceres, debet histrio : tu Camerinos
 Et Barea, tu nobilium magna atria curas ?
 Praefectos Pelopes facit, Philomela tribunos.
 Haud tamen invidetas vati, quem pulpita pascent.
 Quis tibi Maecenas ? quis nunc erit aut Proculus
 Aut Fabius ? quis Cotta iterum ? quis Lentulus alter ?
 Tunc par ingenio pretium ; tunc utile multis
 Pallere et vinum toto noscitur Decembri.

How has this passage been connected with a leading event in the life of Juvenal ?

2. Translate and explain :

- (a.) Transi
 gymnasia, atque audi facinus majoris abollae.
- (b.) Exeat,
 si pudor est, et de pulvino surgat equestri
 ejus res legi non sufficit,—
 hic plaudent nitidi praeconis filius inter
 pinnirapi cultos juvenes, juvenesque lanistae.

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- (a.) Eloquium ac famam Demosthenis et Ciceronis incipit optare, et totis Quinquatribus optat, quisquis adhuc uno partem colit aere Minervam.
- (d.) Cum tamen a sigulis munitam intraverit urbem sarcophago contentus erit.
- (e.) Dirus Maurorum attegias, castella Brigantum, ut locupletem aquilam tibi sexagesimus annus afferat.
- (f.) Dispositis praedives hamis vigilare cohortem Servorum noctu Lícinus jubet, attonitus pro Electro signisque suis Phrygiaeque columna Atque ebore et lata testudine.

3. Translate with brief notes :

- (a.) Quod nec carmine gloriôr supino
Nec retro lego Sotadem cinaedum,
Nusquam Graecula quod recantat echo
Nec dicat mihi luculentus Attis
Mollem debilitate galliambon :
Non sum, Classice, tam malus poeta.
Quid, si per graciles vias petauri
Invitum iubeas subire Ladan ?
Turpe est difficiles habere nugas
Et stultus labor est ineptiarum.
Scribat carmina circulis Palaemon,
Me raris iuvat auribus placere.
- (b.) O cui Tarpeias licuit contingere querous
Et meritis prima cingere fronde comas,
Si sapi, utaris totis, Colline, diebus
Extremumque tibi semper adesse putes.
Lanificas nulli tres exorare puellas
Contigit : observant quem statuere diem.
Divitior Crispo, Thræsea constantior ipso
Lautior et nitido sis Meliore licet :
Nil adicit penso Lachesis fuscisque sororum
Explicat et semper de tribus una secat.

4. Translate and explain :

- (a.) Imputat aetheries ortus haec prima parenti,
libat florentes haec tibi prima genas.
- (How does Juvenal express this ceremony ?)
- (b.) Omnia cum retro pueris opsonia tradas,
cur non mensa tibi ponitur a pedibus ?
- (c.) Atria magna colam. (Compare Juvenal.)
- (d.) An delicatae sole rursus Europae
inter tepentes post meridiem buxos
sedet ambulaeve ?
- (e.) Non hesterna sedet lunata lingula planta,
coccinea non laesum pingit aluta pedem,
et numerosa linunt stellantem splenia frontem.
ignoras quid sit ? splenia tolle, leges.

LATIN COMPOSITION.

Appendix,
No. 2.

Translate into Latin prose :

The provinces of the empire, as they have been described in the preceding chapter, were destitute of any public force, or constitutional freedom. In Etruria, in Greece, and in Gaul, it was the first care of the senate to dissolve those dangerous confederacies, which taught mankind that, as the Roman arms prevailed by division, they might be resisted by union. Those princes whom the ostentation of gratitude or generosity permitted for a while to hold a precarious sceptre, were dismissed from their thrones, as soon as they had performed their appointed task of fashioning to the yoke the vanquished nations. The free states and cities, which had embraced the cause of Rome, were rewarded with a nominal alliance, and insensibly sank into real servitude. The public authority was everywhere exercised by the ministers of the senate and of the emperors, and that authority was absolute and without control. But the same salutary maxims of government which had secured the peace and obedience of Italy, were extended to the most distant conquests. A nation of Romans was gradually formed in the provinces, by the double expedient of introducing colonies, and of admitting the most faithful and deserving of the provincials to the freedom of Rome.

Scholarship
Examinations.

Translate into Latin verse :

Leaves have their time to fall,
And flowers to wither at the north-wind's breath,
And stars to set—but all,
Thou hast *all* seasons for thine own, O Death !
Day is for mortal care,
Eve for glad gatherings round the joyous hearth,
Night for the dreams of sleep, the voice of prayer—
But all for thee, thou mightiest of the earth.

THE ENGLISH LANGUAGE AND LITERATURE.—*Examiner, Professor Yonge.*

1. Distinguish the stages through which the language of these kingdoms passed before it assumed its present form of Modern English ; enumerating also the different languages from which it is derived ; and describing the circumstances which led to those languages obtaining an influence.

2. Discuss the question how far the English language in its present state can be said to have inflections.

3. What is the statement advanced by Dr. Latham with reference to inflectional forms, and to the various degrees in which they are found to prevail in different stages of a language ?

4. How far has Shakespeare adhered to historical truth in those of his dramas of which the subject is drawn from history ancient or modern ? Illustrate your answer by quotations drawn from the play of Julius Cæsar.

5. Give an analysis of the two first scenes in Act III. of Julius Cæsar, those in which Cæsar is slain, and finally carried out to be " burnt in the holy place."

6. Write a brief life of Milton.

7. Describe the characters which he attributes to the different devils in the great council of Pandemonium, described in Book II. of Paradise

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tions.

Lost; and expressly point out any passages in this book in which he seems to have imitated the classical poets.

8. Lord Macaulay, c. I., p. 42, says, "In the monarchies of the middle ages the power of the sword belonged to the prince; but the power of the purse belonged to the nation; and the progress of civilization, as it made the sword of the prince more and more formidable to the nation, made the power of the nation more and more necessary to the prince." What are the conclusions which he draws from this state of things as to the policy which the people in the different countries ought to have adopted; and what contrast does he draw, as to the system which in fact was adopted, between England and other nations of Europe?

9. What, as Macaulay describes it, in his third chapter, was the state of literature in England in the reign of Charles II.?

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

I. Translate into French:

On the Seventh of May, 1696, William landed in Holland; thence he proceeded to Flanders, and took the command of the allied forces which were collected in the neighbourhood of Ghent. Villeroy and Bouffiers were already in the field. All Europe waited impatiently for great news from the Netherlands, but waited in vain. No aggressive movement was made. The object of the Generals on both sides was to keep their troops from dying of hunger; and it was an object by no means easily attained. The treasures, both of France and England, were empty. Lewis had, during the winter, created with great difficulty and expense a gigantic magazine at Clivet, on the frontier of his kingdom. The buildings were commodious and of vast extent. The quantity of provender laid up in them for horses was immense. The number of rations for men was commonly estimated at from three to four millions.—MACAULAY.

II. Translate into English:

Malheureusement, à la fin de l'armistice, tout le monde s'était mis contre nous; les gens nous avaient pris en horreur; on coupait les ponts sur nos derrières, on avertissait les Prussiens, les Russes et les autres de nos moindres mouvements et chaque fois qu'il nous arrivait une débâcle, au lieu de nous secourir, on tâchait de nous enfoncer encore plus dans la boue. Les grandes pluies étaient venues pour nous achever. Le jour de la bataille de Dresde, il en tombait tellement, que le chapeau de l'Empereur lui pendait sur les deux épaules. Mais quand on remporte la victoire, cela vous fait rire: on a chaud tout de même, et l'on trouve de quoi changer; le pire de tout, c'est quand on est battu, qu'on se sauve dans la boue, avec des hussards, des dragons et d'autres gens de cette espèce à vos trousses, et qu'on ne sait pas, lorsqu'on découvre au loin dans la nuit une lumière; s'il faut avancer ou périr dans le déluge.

Zébédé me racontait ces choses en détail. Il me dit qu'après la victoire de Dresde, le général Vandamme, qui devait fermer la retraite aux Autrichiens, avait pénétré du côté de Kulm, dans une espèce d'entonnoir, à cause de son ardeur extraordinaire, et que ceux que nous avions battus la veille étaient tombés sur lui à droite, à gauche, en avant et en arrière: qu'on l'avait pris, avec plusieurs autres généraux, et détruit son corps d'armée.—BRICKMANN-CHATRIAN.

III. Philological Questions :

1. Give the genders of *poudre* and *cyprès*, and account for the deviation of their French gender from that of their etyma.
2. *Hôtel, hôpital ; serment ; sacrement ; métier, ministère*. Discuss the twofold process of derivation observable in these forms.
3. Remark on the phonetic changes of the *d* in *coude*, of the *v* in *chèvre*, and the *g* in *aigle* respectively.

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tions.

GERMAN.

I. Translate into German :

1. Which of the sisters works most diligently ? The prince thanked most graciously. Such a fault is inexcusable. What would he say, if he knew it ! I am ill, on that account I cannot go out. The books which I require, must be ordered from Leipzig.

2. One would think that the larger the company is in which we are engaged the greater variety of thoughts and subjects would be started in discourse. But instead of this, we find that conversation is never so much straitened and confined as in numerous assemblies. When a multitude meet together upon any subject of discourse, their debates are taken up chiefly with forms and general positions ; nay, if we come into a more contracted assembly of men and women, the talk generally runs upon the weather, fashions, news, and the like public topics. In proportion that conversation gets into clubs and knots of friends, it descends into particulars and grows more free and communicative. But the most open, instructive, and unreserved discourse, is that which passes between two persons who are familiar and intimate friends.—ADDISON.

II. Translate into English :

Die beiden Edelknechte hatten in jüngeren Jahren beim Heere gestanden; beide aber hatten damals rasch quittirt: der Graf, weil er für seinen Ehrgeiz zu langsam vorrückte, der Freiherr, weil das leere Garnisonsleben seinem idealen Sinne ein Hindernis war.

Der Aufschuß des Grafen berührte den Freiherrn tief. Mehrere Tage ging er nachdenklich umher; dann sagte er zu seiner Frau: „Dein Bruder liebt die Musik um der Weigen willen, und als uns Haydn besuchte, glaubte er dem Meister das höchste Lob zu geben, indem er gegen mich ausrief: für einen bloßen Komponisten weißt du der Mann nicht schlecht über die Weigen. So geht Dein Bruder denn auch in den Krieg um des Festens willen. Auch ich werde mich wieder als Freiwilliger melden, aber nicht, weil ich so besondere Lust zum Fechten hätte, sondern weil mein Kaiser in dieser Noth eines jeden Armes bedarf.“

Er war darauf gefaßt, daß Helene ihn zurückzuhalten suche. Allein unter Theuren gab sie beglühend seinen Voratz und beklagte nur, daß sie nicht selber mitziehen konnte.— „Ich bin die Frau eines Edelmannes,“ sprach sie, „und darf nicht weinen, wenn Du mit dem Schwerte ritterlich zu Pferde streiß.“

RIEHL.

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tions.

SCIENCE SCHOLARSHIPS.—FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ALGEBRA AND ARITHMETIC.

1. A gentleman has his property invested partly in 3 per cent. and partly in 4 per cent. funds; he sells out both, and invests in the 3 per cents what he receives for the 4 per cents, and *vice versa*. He thus improves his income by one-tenth; find in what proportion his property had been invested—the 3 per cents selling at $85\frac{1}{2}$ and the 4 per cents at 96.

2. The sides of a triangle are 5, 6, 7, respectively; calculate to two decimal places, 1° the bisector of the greatest side; 2° the bisector of the greatest angle.

3. Find to two decimal places the number whose logarithm is $\frac{1}{64}$.

Hence show that $\log 2$ differs from .3 by a quantity less than $\frac{1}{640}$.

4. Given $x^5 + y^5 = 275$ $x + y = 5$; find x and y .

5. Given $x^2 + y^2 = 1$ $(x + y)(xy)^{\frac{1}{2}} = x^3 - y^3$; find x and y .

6. Solve the equations—

$$1^{\circ} \sqrt{x+8} - \sqrt{x+3} = 2\sqrt{x}.$$

$$2^{\circ} (x-1)(x-2)(x-3) = -\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{3}{2}.$$

7. Solve the equation—

$$\frac{\sqrt{4a+b-4x}-\sqrt{b}}{\sqrt{4a+b-4x}+\sqrt{b}} = \sqrt{\frac{a+b-2x}{a}}.$$

8. Find the coefficient of x^6 in $(1+x+2x^2+3x^3)^{10}$; find the sum of the coefficients of all the terms in the expansion of $(1+x)^n$.

9. Show that if we take two series in geometric progression and that we form a third series, consisting of the sums of each pair of their corresponding terms, the last series will be in geometric only when the two first series had the same common ratio.

10. Find the condition that the same values of x and y should satisfy the equations—

$$ax + by + c = 0 \quad a'x + b'y + c' = 0 \quad a''x + b''y + c'' = 0.$$

11. Two roads intersect at C at an angle of 60° ; two runners start at the same moment from points a mile distant from C, one on each road to run towards and past C. Given the rates of the runners to be m and n miles an hour, respectively; find in what time the distance between them measured in a straight line shall be equal to d ; find also the least distance between them.

12. Given $\sin \phi = \frac{\cos \phi}{\sqrt{1 - c^2 \sin^2 \phi}}$; find $\tan \phi$.

GEOMETRY AND TRIGONOMETRY.

1. What propositions in Euclid enable us to solve the following problems:—

1° to divide a right-angle into five equal parts;

2° to divide a given line into five equal parts;

3° to describe an equilateral triangle equal to a given square.

2. One vertex of a triangle of given species is fixed; a second vertex moves along the circumference of a given circle; find the locus of the third.
3. Prove that the sum of the distances of any point P on a circle from two fixed points A and B, also on the circle, varies as the distance of P from the middle point of the arc AB.
4. Through a fixed point O a circle is drawn, cutting a given circle at right angles, show that the common chord PQ, varies as the rectangle OP. OQ.
5. Prove that $\cos(A - B) = \cos A \cos B + \sin A \sin B$, A and B being each less than a right angle. Granted the formulae for the sines and cosines of $A + B$, where A and B are each less than a right-angle; extend these formulae to all values of A and B.
6. Find the angle in the first quadrant which satisfies the equation—

$$\sin x \sin 2x = \frac{1}{4}.$$

7. Prove the formula $\cos \frac{1}{2}C = \sqrt{\frac{s(s-c)}{ab}}$.

Hence show that given base and sum of sides of a triangle the rectangle under the perpendiculars let fall from the extremities of the base on the external bisector of the vertical angle is also given.

8. Prove that $\tan \theta + 2 \sin \theta > 2 \left(\tan \frac{\theta}{2} + 2 \sin \frac{\theta}{2} \right)$, where θ is any arc in the first quadrant.

Given that the circular measure of θ lies between

$$\frac{\tan \theta + 2 \sin \theta}{3} \text{ and } \frac{3 \sin \theta}{2 + \cos \theta},$$

show that π lies between 3.16 and 3.14.

9. Given that $\cos \theta + \tan \alpha \sin \theta = \frac{1}{\cos \theta - \tan \beta \sin \theta}$, find all possible values of θ .

10. A variable tangent to a given circle cuts off from two fixed tangents to the circle intercepts x and y ; find the relations between x and y and known constants.

11. Two angles vary so that their tangents constantly bear to each other a given ratio; find when the difference of the angles will be greatest.

12. Show that in any triangle—

$$\frac{\sin A}{p_1} + \frac{\sin B}{p_2} + \frac{\sin C}{p_3} = 2 \left\{ \frac{\cos A}{a} + \frac{\cos B}{b} + \frac{\cos C}{c} \right\}$$

when p_1, p_2, p_3 are the perpendiculars let fall from the vertices of the triangle on the opposite sides.

SECOND YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

1. Eliminate x, y, z, w , from the equations—

$$\begin{aligned} ay + bz + cw &= 0 \\ ax + c'z + b'w &= 0 \\ bx + c'y + a'w &= 0 \\ cx + b'y + a'z &= 0 \end{aligned}$$

2. Explain accurately what is meant by a convergent series.

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tions.

Examine the convergency or divergency of the series—

$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \&c.$$

$$1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \&c.$$

$$\frac{\log 1}{1^2} + \frac{\log 2}{2^2} + \frac{\log 3}{3^2} \&c.$$

3. Find an advantageous series for calculating the logarithms of a number, being given that of the preceding number.

Find such a series if the logarithms of the two preceding numbers were given.

Find such a series if the logarithms of the three preceding numbers were given.

4. Sum to n terms the series—

$$\tan \theta + \frac{1}{2} \tan \frac{\theta}{2} + \frac{1}{4} \tan \frac{\theta}{4} + \&c.$$

Given $\tan x = n \tan y$, prove that

$$x - y - n \sin 2y + \frac{n^2}{2} \sin 4y - \frac{n^3}{3} \sin 6y + \&c., \text{ where } n = \frac{1-n}{1+n}.$$

5. Express in a rational form the relation subsisting amongst the six lines connecting four points.

6. If a solid angle be contained by three plane angles any two of them are greater than the third.

COORDINATE GEOMETRY.

1. The equations of the sides of a triangle are—

$$\begin{array}{ll} \text{of BC} & 2x + y - 4 = 0 \\ \text{of CA} & x - y + 1 = 0 \\ \text{of AB} & x - 4y - 4 = 0 \end{array}$$

Find the equations

- (1) of the perpendicular from C on AB ;
- (2) of the bisector of the angle C ;
- (3) of the bisector of the side AB drawn through C.

2. Two vertices of a variable triangle lie on the two given lines and the three sides pass through three points indistinctum ; find the locus of the third vertex.

3. Investigate the equation of the polar of a given point with respect to a circle.

A variable circle passes through two fixed points $x=m$ $x=n$ on the axis of x ; prove that the locus of the pole of the axis of y is the curve

$$y^2 + \frac{m+n}{2}x = mn.$$

4. Find by coordinate geometry the locus of a point such that the sum of the squares of its distances from two of the vertices of a given triangle equal twice the square of its distance from the third vertex.

CONIC SECTIONS.

[The propositions to be proved geometrically.]

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tions.

1. The middle points of all parallel chords of a parabola lie on a right line parallel to the axis.
2. The rectangle under the distances of any point on an ellipse from the foci is equal to the square of the semi-diameter parallel to the tangent at the point.
3. In any conic SG varies as SP where S is the focus, P a point on the conic, G the foot of the normal.
4. If two spheres be inscribed in a cone so as to touch a given plane of section upon opposite sides in the points S, H , then will $SP+PH$ be constant, where P is any point on the curve.
5. Two fixed parallel tangents are drawn to a given circle at the points A, B , and a variable tangent meeting the former in P and Q respectively; prove that the locus of the intersection of AQ and BP is an ellipse.
6. The foot of the perpendicular let fall from the focus of an hyperbola on a tangent lies on the circle described on the transverse axis as diameter.
7. A circle and ellipse have a common diameter. From two points L, L' on this diameter two perpendiculars are erected, meeting the circle in M, M' , and also two lines LN, LN' , parallel to the conjugate semi-diameter of the ellipse to meet the ellipse; show that the lines MM' and NN' meet the common diameter in the same point.

Defining the polar of a point X with respect to an ellipse as a line drawn parallel to the diameter conjugate to CX and meeting CX in Y so that $CX \cdot CY = CP^2$ where C is the centre and CP is the semi-diameter drawn through X ; show from the foregoing that the property that any line is cut harmonically by the ellipse pole and polar is directly deducible from the same property for the circle.

DIFFERENTIAL CALCULUS.

1. Define a differential coefficient. In the curve $y=f(x)$ what is the geometric signification of $\frac{dy}{dx}$ at any point? Show that in the curve $x^2-y^2=a^2$ the subnormal is equal to the abscissa.

2. Differentiate the following expressions:—

$$\frac{x}{\sqrt{1-x^2}} \quad \log \frac{\sqrt{1+x}-1}{\sqrt{1+x}+1} \quad \tan^{-1} \left(\sqrt{\frac{b}{a}} \tan x \right).$$

3. Assuming that $\left(1+\frac{1}{x}\right)^x$ approaches a limit as x increases, and calling this limit e , investigate $\frac{de^x}{dx}$ and $\frac{d \log x}{dx}$.

4. Investigate when $\frac{1+3x}{(1+x^2)^{\frac{3}{2}}}$ attains its maximum or minimum values.

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tions.

ENGINEERING SCHOLARSHIPS.—SECOND YEAR STUDENTS.

EXPERIMENTAL PHYSICS.—*Examiner, Professor Everett.*

1. Distinguish between stable, unstable, and neutral equilibrium in the general case of a body acted on by any system of forces. What is the effect of an equilibrating system of forces acting upon a body already in motion?
2. In a siphon barometer, the horizontal sections of the two legs are as 1 : 4. A scale of true inches is attached to the leg of smaller section. Having ascertained the particular point at which the reading is true, how would you compute the true reading corresponding to any other point, temperature corrections being neglected?
3. Explain why the air is generally drier in a room warmed by a close stove than in one warmed by an open fire-place; also why a tall chimney draws better than a short one.
4. Describe one of Carré's forms of apparatus for producing ice artificially.
5. What are meant by *lines* and *tubes of force*, and how may the relation between the distributions of inducing and induced electricity be expressed in terms of them?
6. State Lenz's law for the direction of induced currents, and explain the action of copper dampers used to check the vibration of a suspended magnet.
7. State the laws of the transverse vibrations of strings.
8. State the laws which determine the distance, position, and size, of an image of a real object formed by a concave mirror.

GEOLOGY AND PHYSICAL GEOGRAPHY.—*Examiner, Dr. Cunningham.*

1. State the names and characters of the systems under which Crystals are usually arranged.
2. State the chemical composition of Rock-salt, the crystalline system to which it belongs, the strata with which it is generally associated, and the localities where the largest deposits of it occur.
3. State the more important combinations of Silver, and mention some of the more important Silver mines of the world.
4. Describe the Menavian beds and their characteristic fossils.
5. Give an account of the Millstone grit.
6. What is the geological position of the Speeton clay? Where does it occur? What are its characteristic fossils?
7. Explain the differences between the Palaeozoic and Neozoic types of Corals.
8. Give an account of the more remarkable genera of Ganoid Fish in the Old Red Sandstone.
9. Mention the names of the principal plains and deserts of South America.
10. Enumerate those regions of the globe which are characterized by the presence of active volcanoes.

THIRD YEAR STUDENTS.

Appendix,
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Examina-
tions.SURVEYING, LEVELLING, MEASUREMENT, &c.—*Examiner, Professor James Thomson, LL.D.*

[NOTE.—The numbers annexed to the several questions are values assigned to them, indicating their relative importance for the examination.]

1. Explain clearly how the measurement of offsets ought to be conducted in a survey when the areas of fields are to be calculated from the field book, and how the calculations ought to be carried out. Among other things, explain clearly the operations of measurement and calculation at or near stations in connexion with the change from referring the boundary to one chain line, to referring its continuation to the next chain line: and, in doing so, explain how to proceed in case of the station where two chain lines meet, lying outside of a field, so that the fence lies in the space between the two chain lines, and does not cross either of the chain lines near the station. (4.)

2. It has been stated by some candidates in examinations that, for taking areas of fields from a map, after a process of equalisation of boundaries, or of finding a polygon equal to the area of the field, the polygon is to be divided into triangles, and the area of each is usually to be found by the formula $\sqrt{s(s-a)(s-b)(s-c)}$. Give your remarks on this, and in doing so show whether the proceeding directed would give good results, first when a triangle is nearly equilateral, and second when a triangle has one very obtuse angle, and so has the other two each very acute. You should bring under consideration both ease of practical operation and attainment of well condition methods. Explain also the various useful methods you know for taking areas from maps. (4.)

3. Supposing that the ground rises between two stations, so that no available pole can be set up at either station so as to be visible from the other; explain how, without a theodolite, two persons on the elevated intervening ground may usually be able speedily to put themselves into the straight line between the stations, and to range the straight line preparatory to chaining it. (3.)

4. In surveying, how would you proceed to place a Y theodolite exactly in the straight line between two distant stations without going to either of them, if the line is not known by other marks than those stations? Both stations are visible from the ground where the line is to be accurately found. How would your procedure be modified, if you were using a transit theodolite? (3.)

5. Explain the meanings of the following set of headings for the columns of a table for computations of a traverse survey, and explain the uses of the several columns:—(1) Courses, (2) Distances, (3) Northings, (4) Southings, (5) Eastings, (6) Westings, (7) Total Northings, (8) Total Eastings, (9) Sums of Total Northings, (10) Sums of Total Eastings, (11) East Products, (12) West Products, (13) North Products, (14) South Products. (8.)

6. Set up, as if for an observation, the theodolite submitted to you, and then set it to read $123^{\circ} 54'$. (4.)

7. Rule a levelling field book, and make it complete with proper Headings to the columns: fill in the following observations, and work out the reduced levels for a datum 22.68 feet below the point on which the first

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tions.

reading is taken. The distance of the first staff station is 29 chains from the zero for lengths along the section, and the staff stations are 100 links apart:—

First setting up of level	12-31, 8-47, 5-20, 2-69, 0-58;
Second do.	9-88, 9-14, 8-73;
Third do.	2-16, 5-83, 7-78, 8-28, 9-34.
	Value (8).

8. Calculate by one of the Tables submitted to you, the quantity of earth in a cutting for which the levelling is given in the foregoing question; and for which the formation surface is level, and 19-35 feet above the datum, and 28 feet wide, and the slopes are $1\frac{1}{2}$ to 1.

Also calculate by the other of the Tables submitted to you, the contents of the first two blocks of earth; that is to say, the quantity between the first and second staff stations, and the quantity between the second and third staff stations: and show whether the results for these agree as obtained from the two tables. Your arithmetical work is to be exhibited in an intelligible form. (8.)

9. Explain clearly the chief steps in the process of ranging a railway curve by angles at the circumference, in cases in which a transversal is used. (6.)

10. Supposing a Gravatt's level to be given to you, which is known to be of good construction, but is not presumed to be in adjustment; explain clearly how to test it as to whether its adjustable parts are all in proper relation to one another, and how to make the several adjustments if necessary. The complete answering of this question involves very full explanations as to Gravatt's level. (5.)

NATURAL PHILOSOPHY.—*Examiner, Professor Everett.*

1. Prove that when two forces act on a point the sum of their moments about any point in their plane is equal to the moment of their resultant.

2. If a rigid quadrilateral ABCD be acted on by four forces, represented in magnitude and line of action by AB, AD, CB, CD, show that their resultant will be represented by four times the line joining the middle points of the diagonals.

3. A uniform board is composed of a square ABCD and an equilateral triangle ABE. Show that the distance of the c.g. of the board from the side CD of the square is $CD \frac{5+2\sqrt{3}}{8+2\sqrt{3}}$.

4. A person travelling eastward at the rate of 4 miles an hour, observes that the wind seems to blow directly from the north, and that on doubling his speed it appears to blow from the north-east: find the true direction and velocity of the wind.

5. Find the straight line of quickest descent to a given circle from a given point without it in the same plane.

6. Investigate a formula for computing the density of a liquid from the reading of a hydrometer whose stem is divided into equal parts.

7. If a brass scale is correct at temperature t , and a steel scale at temperature t' , compute the temperature at which the two scales will agree, the coefficients of expansion being respectively α and α' .

MEDICAL SCHOLARSHIPS.—SECOND YEAR STUDENTS.

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tions.

ANATOMY AND PHYSIOLOGY.—*Examiner, Professor Redfern, M.D.*

1. Name the specimens numbered 1 to 10, and describe the characters of the markings on which your opinion is founded.
2. Give a list of the bones with which each of the metacarpal and metatarsal bones articulates at its proximal end.
3. State how the astragalus is kept in its place in the foot, and describe each ligamentous band which is attached to it.
4. State the microscopical characters of the cartilage of the ear, and make a small sketch of its structure.
5. Describe the arrangement and action of the muscular fibres of the stomach and intestines.
6. Define the following terms, and illustrate each by reference to human tissues:—extensibility, contractility, elasticity, flexibility, tonicity, sensibility, sensation.

ZOOLOGY.—*Examiner, Dr. Cunningham.*

1. Briefly state the distinguishing characters of the classes included in the sub-kingdom Protozoa.
2. Give the names and characters of the orders of Actinozoa.
3. Describe the structure of the Holothuroidea.
4. Describe the exoskeleton in a Decapod Crustacean, e.g. (Common Lobster).
5. Enumerate the elements of the shoulder-girdle in an osseous fish, mentioning the different views taken of them by Owen and Parker.
6. What are the principal points in which the skull of a bird differs from that of a mammal?
7. State the characters and geographical distribution of the order Insectivora and mention what genera are represented in the British Islands.
8. Give a brief account of the principal families of Flagellated Carnivora.

BOTANY.

1. Give an account of the more important integumentary appendages in plants.
2. Explain the meaning of the terms protogyny and protandry, and mention the names of any plants which exhibit these conditions.
3. Give an outline of the Linnean system of classification, and state some of the principal objections to its employment.
4. Describe the structure of the flower in the genus *Viola*.
5. Give the names and characters of the main sub-divisions of Rosaceae, and mention the chief genera occurring in the British Islands.
6. State the genera and orders to which the following familiar plants belong, i.e. carrot, parsley, horse-radish, onion, rhubarb, artichoke, Jerusalem artichoke, mangold wurzel, strawberry, currant.
7. Give the characters of the Euphorbiaceae, and mention some of the more interesting genera included in the order.
8. State the principal characters by which Liliaceae, Amaryllidaceae and Iridaceae are distinguished from each other. Give a few examples of each order.

SECOND YEAR STUDENTS.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What is meant by the tension of a vapour, and how is its amount experimentally determined?
2. How is it proved that the solar spectrum extends beyond the visible spectrum, both at the red and violet ends?
3. Calculate to what volume 150 c. c. of oxygen, measured at 15° cent., and under a pressure of 735 mil. (or 29 in.) would be reduced at 0° cent., and 760 mil. (or 30 in.).
4. 200 volumes of a gaseous mixture of oxygen, nitrogen, and carbonic acid were reduced by the addition of caustic potash to 190 vol.; an excess of hydrogen was added to the residue, and an electric spark passed through it, when a diminution of 108 vol. occurred. What was the composition of the original mixture?
5. How is red or amorphous phosphorus prepared, and how does it differ from ordinary phosphorus?
6. How is iodine prepared, and what are its tests?
7. What are the tests for hydrocyanic acid, and how would you determine the amount of it in a given solution?
8. Write the formulas of the following bodies:—ammonium nitrate; acid potassium sulphate; ferrous hydrate; ferric hydrate; potassium manganate; potassium permanganate.
9. How is marsh gas prepared from the acetates? state its composition and its relation to the paraffin.
10. What are the tests for potash, soda and ammonia?
11. How would you separate nickel from iron in a solution of the two metals?
12. Give an account of the characteristic reactions of the arsenious and arsenic acids.
13. State the composition of starch, cane sugar, and grape sugar, and describe the reaction which occurs when starch is heated with dilute acids.
14. Give a general account of the formic and oxalic acids, and show how the former may be prepared from the latter.
15. What is the composition of common ether (ethyl oxide), and how is it prepared from alcohol? Describe the theory of the process.
16. How are the hippuric and uric acids obtained, and what are their distinguishing properties?
17. How would you apply spectrum analysis to the discovery of the presence of blood?
18. What are the tests for albumen?

THIRD YEAR STUDENTS.

ANATOMY AND PHYSIOLOGY.—*Examiner, Professor Redfern, M.D.*

1. Name the specimens numbered 1 to 10, and describe the parts of each which you recognise.
2. Describe the ligaments of the hip joint, and the manner in which each part of the ligaments is affected by the movements of the joint.
3. Mention the muscles which may be used in the production of an inspiration, and state how each acts.

4. Give a careful account of the anatomy of the first stage of the sub-clavian artery, with a more general sketch of the branches of that part of the artery. *Appendix, No. 8.*
5. Describe the origin, course and distribution of the greater and lesser sciatic nerves and their branches. Scholarship Examinations.
6. Describe the physical and vital properties of nerves. State the experimental evidence of the sensory and motor character of nerves and nerve roots, and of the direction in which impulses travel along them.

PRACTICAL CHEMISTRY.

1. How would you distinguish, by means of liquid re-agents, the following acids in solution from one another :—the arsenious, arsenic and ortho (or tribasic) phosphoric acid.
2. If in a solution not too dilute, sulphuretted hydrogen gives a black or dark brown precipitate, and hydrochloric acid a white precipitate, what metals may be present, and how would you distinguish them?
3. Explain generally the process of alkalimetry, and calculate how many grains of sulphuric acid, nitric acid, and crystallized oxalic acid, respectively would neutralise 50 grains of carbonate of sodium ($\text{Na}=23$).
4. What precipitates are obtained when a solution of mercuric chloride is treated with caustic potash, and with ammonia? Write the formulas of the two precipitates.
5. What are the characteristic reactions of the oxalates, acetates, tartrates and benzoates?
6. A deposit from the urine consists either of ammoniaco-magnesian phosphate, oxalate of calcium, or of cystine; how would you discover which of these bodies was present, (a) from the crystalline form; (b) from the action of chemical tests?
7. What are the tests for gelatin and albumin?
8. How would you estimate the amount of organic matter in an ordinary water.

[The Students were also required to perform Chemical Analysis.]

FOURTH YEAR STUDENTS.

ANATOMY.—*Examiner Dr. Redfern.*

1. Describe such characters as will enable you to distinguish the specially marked dorsal and lumbar vertebrae, and name the specimens numbered 1 to 10.
2. Describe the anatomical arrangements which enable the upper jaw to resist the forces applied to its various parts in mastication, and in falls or blows on the face. In what way should a blow be struck to separate it most easily from its connections?
3. Describe the supra-renal capsule—its shape, appearance on the surface and on section, its relations, and its vessels and nerves.
4. How would you display the cavity of the tympanum in the recent state. What parts would you look for, and where would you expect to find each of them?
5. Mention the parts to which the branches of the eighth pair of cranial nerves are distributed.

Appendix,
No. B.Scholarship
Examina-
tions.

PHYSIOLOGY.

1. State the conditions essential for the healthy performance of the functions of nervous matter and nerves, and give evidence in proof.
2. Distinguish colloids and crystalloids. What part has the process of osmosis in absorption from the alimentary canal? What part of that process is vital?
3. State what is known of the function of the liver.
4. What is the office of the cerebrum? State the evidence in favour of your conclusions?
5. What is death? How do you know when it has taken place? What apparent indications of life may happen in a dead body, and how do you explain them?

SURGICAL ANATOMY.—*Examiner, Dr. Gordon.*

1. Describe the relations of the epigastric artery and its varieties, to the neck of the sac in inguinal and femoral hernia.
2. Describe the operation of ligaturing the external iliac artery, and the parts successively exposed during the proceeding.
3. Describe the two specimens of fracture now exhibited—their diagnosis and treatment.

MATERIA MEDICA.—*Examiner, Dr. Seaton Reid.*

1. How many Effervescing alkaline liquors are officinal?
2. What is the proportion of alkali in each, and through what organ is each chiefly eliminated?
3. Give the officinal names of our three Cinchona barks, the per-centage of Quinia in each, and the officinal preparations each enters into.
4. Write a prescription for the use of Quinia by an adult as a tonic, and as a febrifuge.
5. Name our mineral acids, state the medicinal properties of each, and write a prescription for the use of each by an adult, in the infusion of Quassia.
6. Are the infusions of Quassia and Calumba made with hot or cold water, and why?
7. Write a prescription for the infusion of Digitalis for an adult. What symptoms would you watch, and what cautions would you give to your patient?
8. How many grains are in a gramme?
9. How many grains of water would a fluid drachm of water weigh?
10. Name the medicines on the table, and classify them therapeutically.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.—*Examiner, Dr. R. F. Dill.*

1. Describe Carus' curve. What are the advantages afforded by a perfect recognition of it?
2. What is the operation, suited to each degree (making four degrees) of pelvic contraction, in the conjugate diameter, under labour at the full period of gestation? State also the operations indicated in the same degrees of contraction under labour at seven months.

3. Define the term "Bi-polar podalic Version." State under what circumstances, and how, this operation may be performed.
4. What are the principal rules by which traction of the foetus through the pelvis is economised?
5. Name the agents recommended for arresting Uterine hemorrhages. Give the name of the author who first, in these countries, advocated the use of perchloride of iron in post partum hæmorrhage. How is this agent to be applied? What are the dangers arising from its use?
6. Describe briefly the operation of transfusion, as advocated by Dr. Aveling.
7. Give a case of phantom tumor. How, according to Dr. Montgomery and Sir J. Y. Simpson, may it be tested?
8. What is the history, diagnosis, prognosis, and treatment of cancerum oris?

Appendix,
No. 2.
Scholarship
Examinations.

MEDICAL JURISPRUDENCE.—*Examiner, Professor Hodges, M.D., F.R.C.S.*

1. Describe the method of applying Van Deen's test for the detection of blood in stains, and the objections to the evidence afforded by it.
2. How are hæmin crystals to be obtained from old blood stains?
3. What are the methods used for the detection of phosphorus in the contents of the stomach?
4. State the precautions required in the examination of gunshot wounds.
5. How is the freedom from arsenic of the copper employed in Reinsch's process to be ascertained?
6. Describe Graham and Hofman's method for the separation of strychnine from organic liquids.

LAW SCHOLARSHIPS.—FIRST YEAR STUDENTS.

REAL PROPERTY.—*Examiner, Professor Molynaux.*

1. In marriage settlements executed prior to the 8th and 9th Vic. it had been usual to insert an estate to trustees between that of the husband and the limitation to the issue: what results might have resulted in defeat of the objects of the settlement from the omission of such interposed estate?
2. A seized of an estate in fee simple, on his marriage, by common law conveyance limited an estate to the use of himself for life, with remainder to the use of his first and other sons successively in tail, with remainder to the use of B in fee simple: are either, and which, of those remainders vested or contingent?
3. Lands limited to A for life, remainder to B in tail, remainder to the heirs of A. What estates or interests are capable of alienation by A or B respectively without the coöperation of the other?
4. How are cross remainders created by *deed*? And how by *will*? And what difference exists as to their mode of creation by those instruments respectively?
5. What estate is created by a conveyance to A B and his assigns for ever?
6. A, B, C, three joint tenants in fee: A releases his third to B. B dies: what persons are respectively entitled to the land?
7. According to the law of descents, what is the rule as to representation? Give an instance.

Appendix,
No. 2.JURISPRUDENCE.—*Examiner, Professor Leslie.*Scholarship
Examina-
tions.

1. Explain, with examples, the mode in which at one stage of the development of law, *fictions* are employed as law reforming agencies.
2. Point out the chief differences between the Roman and the English law of succession, and between the Roman *heres* and the English *heir*.
3. What is meant by a *universitas juris*?
4. Point out the most important differences between ancient and modern ideas on the subject of wills and successions.
5. Explain the connexion between the Roman *Jus Gentium* and the modern theory of a Law of Nature.
6. Explain the following proposition: "The history of Roman Property Law is the history of the assimilation of *Res Mancipi* to *Res nec Mancipi*."
7. Explain the terms *jus in rem*, *jus in personam*, and state the equivalent terms in Roman law.
8. Explain the meaning of the term *Status*.
9. Explain and criticise the distinction of sovereign governments into governments *de jure* and governments *de facto*.
10. Explain, in accordance with the account in "Ancient Law," the nature of the historical alliance between contracts and conveyances.
11. What was the fourfold classification of contracts in Roman law?
12. How do you account for the disproportionate quantity of penal, as compared with civil law, in archaic codes?

SECOND YEAR STUDENTS.

EQUITY.—*Examiner, Professor Molynaux.*

1. Where a clear case for the exercise of equitable jurisdiction arises in a Court of Equity, under what circumstances does the court give effect to a legal title?
2. Where there are two persons having equitable rights, what qualification of the maxim "*qui prior est tempore, potior est jure*" becomes necessary in the adjustment of their claims?
3. What are the classes of cases in which the maxim "*Equitas sequitur legem*" is solely applicable?
4. To what equitable branch of the jurisdiction is the doctrine affecting purchasers with notice to be referred?
5. Under what circumstances will a Court of Equity decline to give relief to a claimant who would otherwise be entitled as having an equity, or at least qualifies the ordinary relief.
6. Give some instances of the maxim, equality is equity.
7. Give some instances of the application of the maxim, "*Equity looks on that as done which ought to have been done*."
8. What state of facts give jurisdiction to a Court of Equity beside that in which the party aggrieved is wholly remediless at law?
9. Where a person executes a lease as lessee of a house and the lease contains the ordinary covenant to keep in repair, and the house is burned by pure accident, the lessor brings an action on the covenant and the lessee resorts to a Court of Equity for an injunction to restrain the plaintiff from proceeding at law on the ground of *accident*; on what principle will the Court refuse the relief sought?

10. Give an instance in which the Court will give relief although the mistake upon which he claims the aid of the Court has arisen in matter of law. Appendix,
No. 8.
11. State some instance or instances in which the Court will set aside an instrument on the ground of fraud although the person executing is of competent age and understanding. Scholarship
Examina-
tions.
12. Is there any, and if so what, class of cases in which a *particeps criminis* will be relieved from his agreement by a Court of Equity? State the principle upon which such action of the Court is sustained against the general rule?

JURISPRUDENCE AND CIVIL LAW.—*Examiner, Professor Leslie.*

1. "If by any means we can determine the early forms of jural conceptions, they will be invaluable to us. They contain potentially all the forms in which law has subsequently exhibited itself."—(*Ancient Law*.) Explain this clearly, with examples from the development of Roman Law.
2. Point out the chief differences between the Roman and the English Law of Succession.
3. Sir H. Maine points out some important differences between ancient and modern ideas on the subject of Wills and Successions?
4. Explain the modes of acquiring things by *occupation*, *tradition*, *accession*, *specification*, and *usucaption*.
5. What was the *lex regia*, and how do you account for the employment of such a term in the time of the Emperors?
6. Explain, with examples, the great fourfold classification of contracts in Roman Law.
7. B steals a lamb from A, and sells it to C, who sells it back to A, who resells it to D, who keeps it for three years, when A claims it as stolen from him. Apply Roman Law to this case.
8. Explain the term *bona vacantia*, and state the law of *usucaption* with respect to them.
9. Criticise the classification and arrangement of the parts of a *corpus juris* in the Institutes.
10. Explain, with examples, the terms *quasi-contract* and *quasi-delinct*.
11. A makes a will, without naming at all one of his sons in *potestate*; B makes a will without naming one of his daughters. What is, according to Roman Law, the effect of the omission in each case?
12. Explain the terms *dominium*, *obligatio*, *servitus*, *emphyteusis*, *heredes sui*, *beneficium inventarii*.

THIRD YEAR STUDENTS.

COMMON LAW.—*Examiner, Professor Molyneux.*

1. State the nature of a guarantee.
2. What act on the part of a creditor, not being an express discharge of the surety, will nevertheless operate to discharge the surety?
3. What is the legal nature of contract implied as between the drawer and indorsee of a bill of exchange made payable to the order of the drawer.

Appendix,
No. 6.
Scholarship
Examina-
tions.

4. In the instance of a contract not within the Statute of Frauds, but reduced to writing; under what circumstances is oral evidence admissible in an action of which that contract forms the foundation?
5. How does a chose for action differ from a chose in possession in respect to the rights of and the power of dealing with it which can be exercised over it by the owner at law?
6. What are limits of the liability of a principal for the acts of his agent?
7. When one partner obtains possession exclusively of the entire partnership property, can another partner sue him at common law to recover his share? And if not, why not?
In what respect do the Joint Stock Companies Acts form an exception to the common law in that particular?
8. What rights of the husband survive to the wife on his death as against his personal representatives?

JURISPRUDENCE AND CIVIL LAW.—*Examiner, Professor Leslie.*

1. Criticise the classification and arrangement of the parts of a *corpus juris* in the Institutes.
2. Point out the chief differences between the English and the Roman Law of Succession.
3. Sir H. Maine says "the early forms of jural conceptions contain, potentially, all the forms in which law has subsequently exhibited itself." Explain this, with examples from the history of Roman Law.
4. Give some historical account of the Roman law of *usucapion*, and the English law of *prescription*, respectively.
5. Explain the term *bona vacantia*, and state the law of *usucapion* with respect to them.
6. Explain, with examples, the fourfold classification of Contracts in the Institutes.
7. Explain the historical connexion between *conveyances*, *testament*, and *contract*.
8. What are, according to Austin, the chief differences between Roman and English equity?
9. What are, according to Sir H. Maine and Austin, respectively, the chief resemblances between Roman and English equity?
10. Give an account of the contents and arrangement of the Code, Pandects, and Institutes respectively.
11. Why does Austin object to the subdivision of *Dominia* (as opposed to *obligationes*) into *Dominium rei singulae*, *jura in re aliena*, and *universitates rerum*?
12. State the substance of Austin's explanation of the term, *actiones utiles*.

SENIOR SCHOLARSHIPS.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

Translate into French:—

It is not very profitable to inquire into the constitutional antiquities of a country which furnishes no authentic historian, nor laws, nor charters, to guide our research, as is the case with Scotland before the

twelfth century. The latest and most laborious of her antiquaries appears to have proved that her institutions were wholly Celtic until that era, and greatly similar to those of Ireland. A total, though probably gradual, change must therefore have taken place in the next age, brought about by means which have not been satisfactorily explained. The crown became strictly hereditary, the governors of districts took the appellation of earls, the whole kingdom was subjected to a feudal tenure, the Anglo-Norman laws, tribunals, local and municipal magistracies were introduced as far as the royal influence could prevail; above all, a surprising number of families, chiefly Norman, but some of Saxon or Flemish descent, settled upon estates granted by the kings of Scotland, and became the founders of its aristocracy.—HALLAM.

Appendix,
No. 8.
Scholarship
Examina-
tions.

2. Write a brief summary, in French, of Ponsard's "*Agnès de Méranie*."

GERMAN.

Translate into German :

I should have told you that I went back to Hamburg on Thursday to take leave of my friend, who travels southward, and returned hither on the Monday following. From Empfelde, a village half-way from Ratzeburg, I walked to Hamburg through deep sandy roads and a dreary flat: the soil everywhere white, hungry, and excessively pulverized; but the approach to the city is pleasing. Light cool country-houses, which you can look through and see the gardens behind them, each house with neat rails before it, and green seats within the rails. Every object, whether the growth of nature or the work of man, was neat and artificial. It pleased me far better than if the houses and gardens, and pleasure-fields, had been in a nobler taste: for this nobler taste would have been mere apery.—COLERIDGE.

2. Give a brief account, in German, of Schiller's "*Wallenstein*."

ITALIAN.

Translate into Italian :—

Among the foreigners whom the fame of the discoveries made by the Portuguese had allured into their service, was Christopher Columbus, a subject of the republic of Genoa. Neither the time nor place of his birth are known with certainty, but he was descended of an honourable family, though reduced to indigence by various misfortunes. After acquiring some knowledge of the Latin tongue, the only language in which science was taught at that time, he was instructed in geometry, astronomy, and the art of drawing. Thus qualified, he went to sea at the age of fourteen, and began his career on that element which conducted him to so much glory. His early voyages were to those ports in the Mediterranean which his countrymen the Genoese frequented.—ROBERTSON.

Translate into English :—

In que' giorni si volle dare il bianco alle pareti delle nostre carceri e ci trasportarono frattanto ne' sotterranei. Disgraziatamente in quell' intervallo non fummo posti in luoghi vicini. Schiller mi diceva che Orobani stava bene, ma io dubitava che non volesse dirmi il vero, e temeva che la salute già sì debole di questo deteriorasse in que' sotterranei.

Avessi almeno avuto in fortuna d'esser vicino in quell'occasione al

Appendix,
No. 2.
Scholarship
Examina-
tions.

mio caro Maroncelli! Udii per altro la voce di questo. Cautando di salutammo, a dispetto de' garriti delle guardie.

Venne in quel tempo a veridici il protomedico di Brienn, mandata forse in conseguenza delle relazioni che il soprintendente faceva a Vienna, sull' estrema debolezza a cui tanta scarsità di cibo ci aveva tutti ridotti, ovvero perchè allora regnava nelle carceri uno scorbutto molto epidemico.
—SILVIO PELLICO.

HISTORY.—*Examiner, Professor Yonge.*

QUESTIONS.

1. What were the claims, so far as they were founded on hereditary pretensions, of Henry VII., James I., and George I., to the throne of England?
2. Compare the political careers and characters of Lord Burleigh and Sir Robert Walpole.
3. Mention the most important events in the history of the French Parliament between the years 1640—1780.
4. State the general objects and results of the treaties of Vervins, of Nimeguen, of Ryswick, of Utrecht, of the Hague (1717) and of Paris (1783).
5. Give sketches of four of the following statesmen, taking two English, and two French—Sally, Strafford, Mazarin, Clarendon, Colbert, Marlborough, Dubois, Lord Chatham, Turgot, Burke, Pitt, Mirabeau.
6. What sides were taken by England and France in the wars of Silesia, and the seven years' war? What circumstances determined the policy of the two countries on each occasion.
7. Who were the Encyclopedists in France? who were the Economists; and what were the objects of those two parties.
8. Give a list of the English Prime Ministers from the commencement of the 18th century to the year 1820.

SUBJECT FOR ESSAY.

AN OUTLINE OF THE EVENTS OF THE ENGLISH REBELLION, AND OF THE FRENCH REVOLUTION OF 1798; WITH A COMPARISON OF THE OBJECTS OF THE TWO TRANSACTIONS; A CONSIDERATION HOW FAR EITHER WAS JUSTIFIED; AND A REVIEW OF THE RESULTS OF BOTH.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Describe briefly the method of analysing a mineral not attacked by acids, which is composed of silica, alumina, lime and potash.
2. In spectrum analysis, how are the air lines distinguished from the metal lines, and how is the identity of many of the dark lines in the solar spectrum with the bright lines of certain elements established?
3. How is the equivalency or atomicity of an element determined? Among multivalent elements, what is the apparent equivalency of nitrogen in NH_3 and in NH_4Cl ; of sulphur in H_2S and in H_2SO_4 ; of iron in FeCl_2 and Fe_2Cl_6 .
4. What are the exceptions to the law that the densities of the vapours of the elementary bodies correspond to their atomic weights?

5. State the composition of cane sugar, and the change which it undergoes when acted on by dilute acids, and describe the action of polarised light upon the solution before and after it has been heated with the acid. How does a solution of glucose differ in the latter respect from one of cane sugar? Appendix,
No. 8.
Scholarship
Examinations.

6. Show how alcohol may be prepared synthetically from its elements.
7. How is benzol prepared from benzoic acid? State the reaction, and show how the other aromatic hydrocarbons may be derived from benzol.
8. Write the formulas of the methyl, ethyl, propyl and isopropyl alcohols on the marsh gas type, and explain why no isomeric methyl or ethyl alcohol can exist.

[The Students were also required to perform chemical analyses.]

NATURAL HISTORY.—Examiner Dr. Cunningham.

ZOOLOGY.

1. Briefly state the distinguishing characters of the classes included in the sub-kingdom Vermes.
2. Give the characters of the class Otenophora, and mention the names of some of the principal genera.
3. Give an account of the development of Echinodermata.
4. State what you know with regard to the structure, habits, and development of the Rhizocephalous Crustacea.
5. Give a brief account of the vertebrate theory of the skull and mention some of the objections to it.
6. State the names and characters of the suborders of Lacertilia and Ophidia, as given in the lectures.
7. Give the names and characters of the principal subdivisions of Natatorial birds.
8. Describe the structure of the stomach in the ruminating Artiodactyla. What are those characters by which the Camelidae are chiefly distinguished from the other ruminants?

BOTANY.

1. Describe the principal forms of cellular tissue.
2. Give an account of the principal forms assumed by stamens.
3. State the names and characters of the groups of fruits as given in the lectures, and give the names of the fruits included in each group.
4. State the principal characters of the order Malvaceae, and mention those by which it is mainly distinguished from Byttneriaceae and Sterculiaceae. Give the names of some of the more important genera of Malvaceae.
5. Give the characters of the sub-orders of Leguminosae, the names of some of the genera belonging to each sub-order, and the principal products yielded by each.
6. State the characters and distribution of the order Cucurbitaceae.
7. Give a list of the principal composite and umbelliferous plants employed in medicine, or as food.
8. State the characters of the order Coniferae, and give the names of some of the more important genera. What are those characters by which a Fir (*Abies*) may be most readily distinguished from a Pine (*Pinus*)?

Appendix,
No. 8.Scholarship
Examina-
tion.METAPHYSICS.—*Examiner, Professor Park, M.A.*

1. Give a concise summary of Berkeley's arguments in the "Dialogues between Hylas and Philonous."
 2. Examine Mr. Mill's objections to the doctrine of unconscious mental modifications. State the theory of Stewart and Dr. McCosh.
 3. Define the phenomenon usually called "Association of Ideas." Is it distinct from (1) Recurrence; (2) Habit?
 4. Explain these phenomena:—
 - (1) "Thought was not, in enjoyment it expired."
 - (2) *Antonio*—"If the Jew do out but deep enough,
I'll pay it presently with all my heart."
 - Lady Macbeth*—"If he do bleed
I'll gild the faces of the grooms withal;
For it must seem their guilt."
- Playing upon words in such circumstances is not unnatural?
5. Define Faith. Explain—"Belief is the primary condition of reason, and not reason the ultimate ground of belief."

-
1. What is Sir Wm. Hamilton's position in relation to (1) Reid and Stewart; (2) Kant; (3) James Mill?
 2. State the doctrine of Relativity so as to be (1) consistent with, and (2) opposed to, a doctrine of real human knowledge.
 3. Locke's account of Maxims? Of Modes? Why did he think Morality demonstrable?
 4. Explain—"Causingness and causedness mean not only antecedence and consequence, but also sameness of series and proximity of parts."
 5. Who believe that "the intellectual intuitions of any one generation are the embodied experiences of the previous race"? This theory is the most probable solution of "one of the great philosophical problems of our day"?
 6. Translate with suitable comment—"Jura non consilio bonus, sed more eo perductus ut non tantum recte facere possim, sed nisi recte facere non possim."
 7. State and discuss two psychological questions regarding the True, or the Beautiful, or the Good.